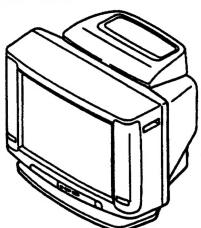
# KV-F25MF1/F25MZ3 RM-858

# SERVICE MANUAL



## Thailand Model

KV-F25MF1 Chassis No. SCC-G70E-A KV-F25MZ3 Chassis No. SCC-G70D-A

HK Model

KV-F25MF1 Chassis No. SCC-G43L-A

G3F CHASSIS

MODELS OF TH	IE SAME SERIES
KV-F25MF1/F25MZ3	
KV-F25MF1/F25MN11/F25MN31	



TRINITRON. COLOR TV SONY.

## **SPECIFICATIONS**

	KV-F25MF1	KV-F25MZ3	Note
Power requirements	110-240 V AC, 50/60 Hz		
Power consumption (W)	163		
Television system	B/G, I, D/K, M		
Color system	PAL, PAL 60, SECAM, NTSC4.43	3, NTSC3.58	
Stereo system		A2 Stereo (German) B/G	
Channel coverage B/G	VHF: E2 to E12/UHF: E21 to E69/	CATV: S01 to S03, S1 to S41	
1	UHF: B21 to B68/CATV: S01 to S	03, S1 to S41	
D/K	VHF: R1 to R12/UHF: R21 to R60	CATV: S01 to S03, S1 to S41	
M	VHF: A2 to A13/UHF: A14 to A79/ CATV: A-8 to E, G to W+25, W+27 to W+84		
Antenna	75-ohm external antenna terminal for VHF/UHF		
Audio output (speaker)	6W × 2	6W × 2 5W+5W+15W (SUPER WOOFER)	
Number of terminal Video	Input: 3 Output: 1		
Audio	Input: 3 Output: 1		
S1-Video	Input: 2		Y: 1 Vp-p, 75 ohms, unbalanced, sync negative C: 0.286 Vp-p, 75 ohms
SUPER WOOFER		Output: 1	
Picture tube	Super Trinitron		
Tube size (inch)	25		Measured diagonally
Screen size (cm)	60		Measured diagonally
Dimensions (w/h/d, mm)	690 × 521 × 511	690 × 552 × 517	
Mass (kg)	35	40	
Accessories Supplied	Remote commander (1)		
·	Size R6 (AA) battery (2)		
Optional	Magic commander RM-829, RM-	848	
	TV stand SU-F25		

Design and specifications are subject to change without notice.

## CAUTION

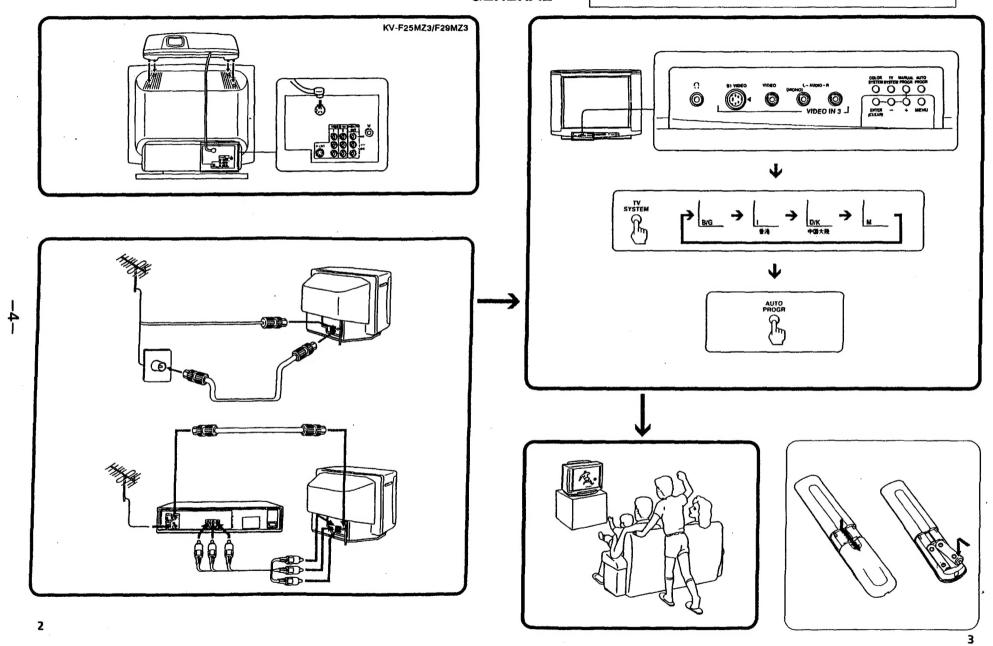
SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

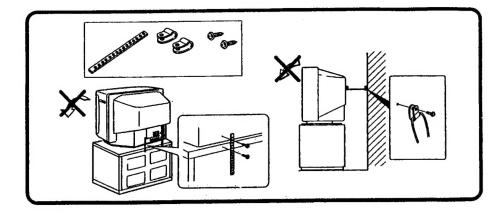
## SAFETY-RELATED COMPONENT WARNING!!

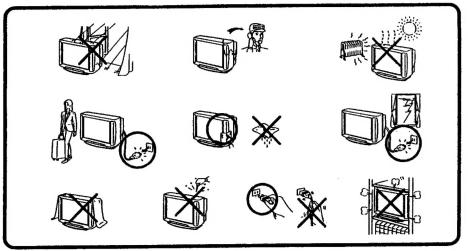
COMPONENTS IDENTIFIED BY SHADING AND MARK & ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

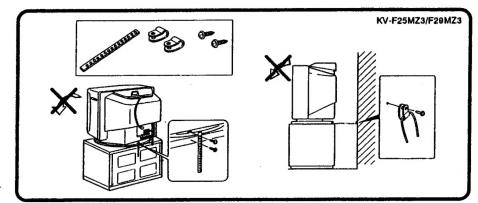
# SECTION 1 GENERAL

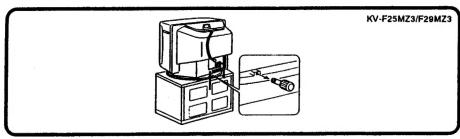
The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.









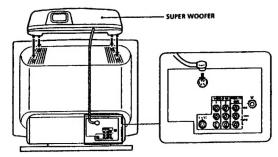


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-5-

Attach the SUPER WOOFER into the foothold on the top of the TV.

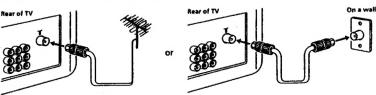
Plug the connector into the SUPER WOOFER (8 $\Omega$ ) terminal at the rear of the TV.



Connect only the supplied SUPER WOOFER; otherwise the TV may malfunction.

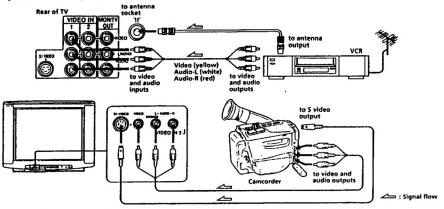
## Connecting a VHF antenna or a combination VHF/UHF antenna - 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the T (antenna) socket at the rear of the TV.



## **Connecting optional equipment**

You can connect optional audio/video equipment to your TV such as a VCR, multi disc player, camcorder, headphones, or stereo system.



When connecting a monaural VCR

Connect the yellow plug to VIDEO and the black plug to AUDIO-L (mono).

When both 51-Video and video signals are input

The S1-Video input signal is selected. To view a video signal, disconnect the S1-Video connection.

Note on the S1-Video signal

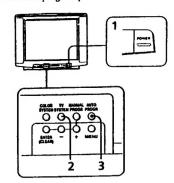
When inputting the S1-Video signal through the VIDEO IN 1 or VIDEO IN 3 jack, turn wide mode OFF if you do not want to display the picture in wide mode (see page 19).

Note on the video input

When no signal is input, the screen becomes blue.

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You can preset up to 100 TV channels in numerical sequence from program position 1.



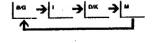
1 Press POWER.



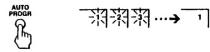
When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

2 Press TV SYSTEM to select your local TV system.





3 Press AUTO PROGR.



To start presetting channels automatically from the specified program position

- 1 Press MANUAL PROGR.
- 2 Press TV SYSTEM to select your local TV system.
- 3 Press PROGR +/- to select the program position.
- 4 Press AUTO PROGR.

## Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.

- 1 Press MANUAL PROGR.
- 2 Press PROGR +/- until the required program position appears on the screen.
- 3 Press TV SYSTEM to select your TV system.
- 4 Press + or until the required channel picture appears on the screen.
- 5 Press MANUAL PROGR.

If the TV system is not properly selected The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV

- 1 Press PROGR +/- to select the program position.
- 2 Press TV SYSTEM until the picture and sound become normal.



## Note

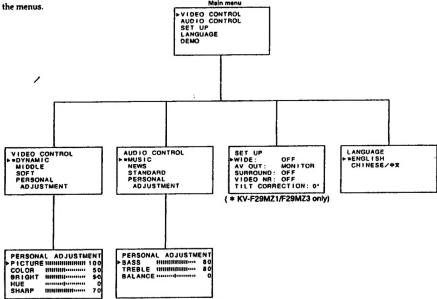
. The setting of the TV SYSTEM is memorized for each program

## Disabling program positions

By disabling unused or unwanted program positions, you can skip those positions when you press PROGR

- 1 Press PROGR +/- until the unused or unwanted program position appears on the
- 2 Press MANUAL PROGR.
- 3 Press ENTER (CLEAR) on the TV.
- 4 Press MANUAL PROGR.

To cancel the skip setting Preset the channel manually or automatically again.



## Getting back to the previous menu

Move the cursor (>) up to the first line of each menu (except the main menu), and press ENTER.

#### Notes

- If more than 60 seconds elapse after you press a button, the menu screen disappears automatically.
- You can display all of the features available for the TV in DEMO mode.

Cancelling the menu screen

Press MENU.

Getting Started | 11-EN

# **Changing the menu language**

If you prefer Chinese to English, you can change the menu language. You can use buttons on both the remote commander and the TV.



1 Press MENU.

MENU

PVIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

2 Press + or - to move the cursor (▶) to LANGUAGE.



VIDEO CONTROL AUDIO CONTROL SET UP FLANGUAGE DEMO

3 Press ENTER.



LANGUAGE >=ENGLISH CHINESE/+X

4 Press + or - to select CHINESE.



LANGUAGE PENGLISH CHINESE/PX

5 Press ENTER.



通客 英文/ENGLISH ►程中文

6 Press MENU to return to the normal screen.



12-EN | Getting Started

#### Getting back to the English menu

1 Press MENU.



▶ 四條便定 會确接定 其它穩定 语質/LANGUAGE 演示

2 Press + or - to move the cursor (►) to the fourth line from the top ("语言/LANGUAGE").



団像領定 資務役定 产資源/LANGUAGE 液流

3 Press ENTER.



语言 ▶ 英文、ENGLISH 書中文

4 Press ENTER.



LANGUAGE > MENGLISH CHIMESE/中文

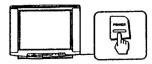
5 Press MENU to return to the normal screen.



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Watching the TV



When the TV is in standby mode after pressing POWER, press POWER on the remote commander.

2 Select the TV channel you want to watch.

To select a channel directly

Press a number button.



To select a two-digit channel, press "-/--" before the number buttons.

For example: to select channel 25, press "-/--," and then "2" and "5."



To scan through channels Press PROGR/PAGE +/- until the channel you want appears.



3 Press VOL +/- to adjust the volume.

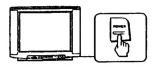


## Switching off the TV

To switch off the TV temporarily, press POWER on the remote commander.

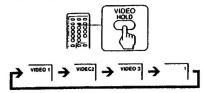


To switch off the IV completely, press POWER. If the power on the TV is turned off in standby mode, the STANDBY indicator may remain alight for a while.



Watching the video input

Press VIDEO/HOLD.

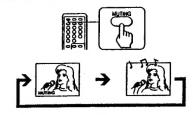


To watch TV, press TY.



### Muting the sound

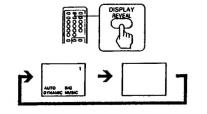
Press MUTING.



## Displaying on-screen information

Press DISPLAY/REVEAL.

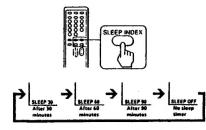
The program position, local system, and TV settings are displayed on the screen.



## **Setting the Sleep Timer**

You can set the TV to turn off automatically after the period of time you set.

Press SLEEP/INDEX.



To cancel the Sleep Timer, press SLEEP/INDEX repeatedly until "SLEEP OFF" appears, or turn the TV

## Adjusting the picture



1 Press MENU.



PYIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

2 Press + or - to move the cursor (►) to VIDEO CONTROL.



VIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE

3 Press ENTER.



VIDEO CONTROL DYNAMIC MIDDLE SOFT PERSONAL ADJUSTMENT

4 Press + or - to select the setting, and press

Select	To Display more contrast picture	
DYNAMIC		
MIDDLE	Display normal contrast picture	
5OFT	Display picture suitable for movies and video games	
PERSONAL.	Display the picture that is adjusted using ADJUSTMENT	
ADJUSTMENT	Make specific adjustments. See "Adjusting the picture setting."	

5 Press MENU to return to the normal screen.

You can adjust the picture to your own taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

- 1 Press MENU.
- 2 Press + or to move the cursor (▶) to VIDEO CONTROL, and press ENTER.
- 3 Press + or − to move the cursor (►) to ADJUSTMENT, and press ENTER.
- 4 Press + or to move the cursor (►) to the item you want to adjust, and press ENTER.

PERSONA	L ADJUSTM	EN'
PICTURE	111112191123111111111	100
COLOR	H1111111111111111111111111111111111111	50
BRIGHT	[41][[1]]	56
HUE		
SHARP	PREFERENCE	7 (

5 Press + or - to adjust the item, and press

Item	Press + to	Press - to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

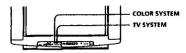
- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

#### Note

You can adjust HUE for NTSC color system only.

If the color of the picture is abnormal

When receiving programs through the T terminal: Press TV SYSTEM or COLOR SYSTEM until the color becomes normal.



#### Note

Normally set COLOR SYSTEM to AUTO.

## Adjusting the sound



1 Press MENU.



>VIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

2 Press + or − to move the cursor (►) to AUDIO CONTROL.



VIDEO CONTROL NAUDIO CONTROL SET UP LANGUAGE DEMO

3 Press ENTER.



AUDIO CONTROL
\*\*MUSIC
NEWS
STANDARD
PERSONAL
ADJUSTMENT

4 Press + or - to select the sound that you want, and press ENTER.

Select	То	
MUSIC	Listen to music programs.	
NEWS	Listen to news program. A person's voice can be heard clearly	
STANDARD	Listen to sound other than music or news.	
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT.	
ADJUSTMENT	Make specific settings. See "Adjusting the sound setting."	

**5** Press MENU to return to the normal screen.

16-EN | Operations

## Adjusting the sound setting (ADJUSTMENT)

You can adjust the sound to your own taste with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

- 1 Press MENU.
- 2 Press + or to move the cursor (►) to AUDIO CONTROL, and press ENTER.
- 3 Press + or − to move the cursor (►) to ADJUSTMENT, and press ENTER.
- 4 Press + or to move the cursor (►) to the item you want to adjust, and press ENTER.



5 Press + or - to adjust the item, and press ENTER.

Item	Press + to	Press – to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

If the sound is distorted or noisy

When receiving programs through the T terminal: Press TV SYSTEM until the sound becomes clear.



Operations | 15-EN

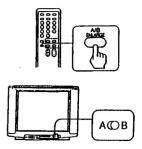
# Selecting a stereo or bilingual program

#### KV-F25MZ3/F29MZ1/F29MZ3 only

You can enjoy stereo sound or bilingual program of A2 (German) system. The initial setting is stereo sound.

Press A/B/ENLARGE repeatedly until you receive the sound you want.

The sound changes and the corresponding indicator lights up as follows:



## When receiving a A2 (German) program:

Broadcasting	On-screen display	Selected sound (indicator)
A2 (German) stereo	STEREO Stereo (A and B)	
A2 (German) bilingual	_	

## Receiving area for A2 (German) program

System	Receiving area
A2 (German)	Australia, Malaysia,
	Thailand, etc.

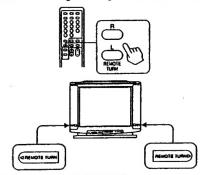
#### Notes

- · If the signal is very weak, the sound becomes monaural.
- . If the stereo sound is noisy, select "regular" or "mono." The sound becomes monaural, however, the noise will be reduced.

# Turning the TV using the remote commander (REMOTE TURN)

## KV-F25MZ3/F29MZ3 only

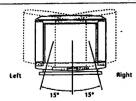
You can turn the TV up to 15 degrees to the left or right (at a total of 30 degrees) using the remote commander.



#### Press R or L of REMOTE TURN.

The TV turns and the REMOTE TURN indicator flashes as follows:

Press	Turning direction	On-screen display	Indicator
R	To the right	REMOTE TURN	Right REMOTE TURN
L	To the left	REMOTE TURN	Left REMOTE TURN



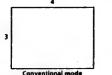
- . You cannot turn the TV using the remote commander if the power is turned off.
- . Do not turn the TV forcibly as it cannot be turned more than 15 degrees by hand.
- Do not place objects around the TV that obstruct its turning.
- · If the picture quality becomes slightly abnormal after using the remote turn, turn off the power of the TV, then turn it on again.

18-EN | Operations

# **Customizing the TV** (SET UP)

## Turning wide mode

When receiving the signal conforming to wide mode (S1-Video signal), you can change the size of the picture on the screen.





- 1 Press MENU.
- 2 Press + or to select SET UP, and press ENTER.

WIDE: OFF AV OUT: MONITOR SURROUND: OFF VIDEO NR: OFF

- 3 Press + or to select WIDE, and press ENTER.
- 4 Press + or to select the wide mode to suit the size of the picture you want to display on the TV screen.

Select	To
ON	Display the picture on the screen in wide mode
AUTO .	Display the picture on the screen in wide mode automatically when receiving the S1-Video signal through the S1-Video input jack
OFF	Display the picture on the screen in conventional size

. When the picture is in wide mode, the bright lines which are used for adjusting the CRT at optimum level appear at the top of the screen.

## Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV.

- 1 Press MENU.
- 2 Press + or to select SET UP, and press

SET UP WIDE: OFF AV OUT: MONITOR SURROUND: OFF VIDEO NA: OFF

- 3 Press + or to select AV OUT, and press
- 4 Press + or to select the output signal, and

Select	To
TV	Output the TV signal.
MONITOR	Output the signal of the picture you are watching as a monitor.

. Do not change the channel while recording with a VCR through the MON/TV OUT jacks. If you change the channel, it also changes the channel you are recording.

## Selecting the surround sound

You can enjoy a surround sound effect that is like being in a music hall when receiving stereo signals.

- 1 Press MENU.
- 2 Press + or to select SET UP, and press ENTER.

WIDE: MONITOR SURROUND: OFF VIDEO NR: OFF

- 3 Press + or to select SURROUND, and press
- 4 Press + or to turn the surround sound on or off, and press ENTER.

Select	to
ON	Listen to surround sound that is effective for stereo signals
SPACE	Listen to surround sound that is effective for monaural signals
OFF	Turn off surround sound

## Reducing the noise of the picture

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a videotape that is in poor condition.

- 1 Press MENU.
- 2 Press + or to select SET UP, and press

SET UP AV OUT: MONITOR SURROUND: OFF VIDEO NA: OFF

- 3 Press + or to select VIDEO NR, and press
- 4 Press + or to turn the noise reduction on or off, and press ENTER.

20-EN | Operations

## Adjusting the tilt of the picture

KV-F29MZ1/F29MZ3 only

You can adjust the tilt of the picture if it is not aligned to the TV screen. This may happen due to the direction of the earth's magnetic field in relation to the position

- 1 Press MENU.
- 2 Press + or to select SET UP, and press ENTER.

WIDE: MONITOR VIDEO NR: OFF TILT CORRECTION: 0

- 3 Press + or to select TILT CORRECTION, and press ENTER.
- 4 Press + or to select the most suitable value to align the picture position.

TILT CORRECTION:  $-3 \leftarrow -2 \leftarrow -1 \leftarrow 0 \rightarrow +1 \rightarrow +2 \rightarrow +3$ 

Operations | 19-EN

## **Troubleshooting**

If you have any problems, read this manual again and check the countermeasure for each of the symptoms listed below.

If the problem persists, contact your nearest authorized service center or dealer.

#### **Snowy picture Noisy sound**





- → Check the antenna.
- → Check the antenna connection on the TV and on the wall.
- → Check the TV system setting.

## **Dotted lines or stripes**



This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

## Double images or "ghosts"



→ This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

#### **Good picture Noisy sound**





→ Check the TV SYSTEM setting.

### No picture No sound



- → Press POWER.
- Check the antenna connection.
- -- Check the VCR connections.

#### **Good picture** No sound





- → Press VOLUME +.
- → Press MUTING.
- → Press A/B/ENLARGE.

#### No color



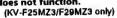
- → Adjust the COLOR level in the VIDEO CONTROL menu's ADJUSTMENT option.
- --- Check the COLOR SYSTEM setting.

#### No sound from SUPER WOOFER (KV-F25MZ3/F29MZ3 only)



## Remote turn does not function.

WOOFER.



→ Check the connection of the SUPER



- Check that the stopper located at the swivel (rear of the TV) is removed.

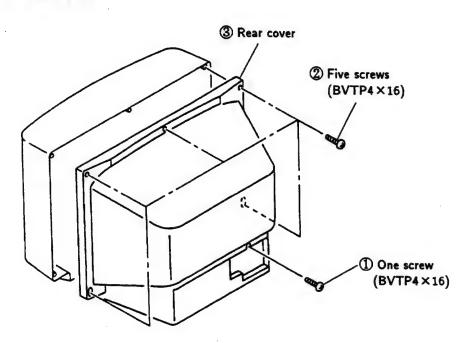
#### TV cabinet creaks

→ Even if the picture or the sound is normal, changes in the room temperature sometimes make the TV cabinet expand or contract, making a noise. This does not indicate a malfunction.

Additional Information | 21-EN

# SECTION 2 DISASSEMBLY

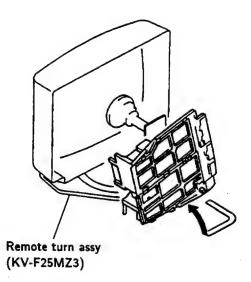
## 2-1. REAR COVER REMOVAL



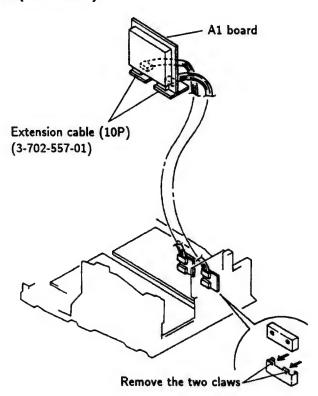
## 2-2. CHASSIS ASSY REMOVAL

# Push D Chassis assy Remote turn assy (KV-F25MZ3)

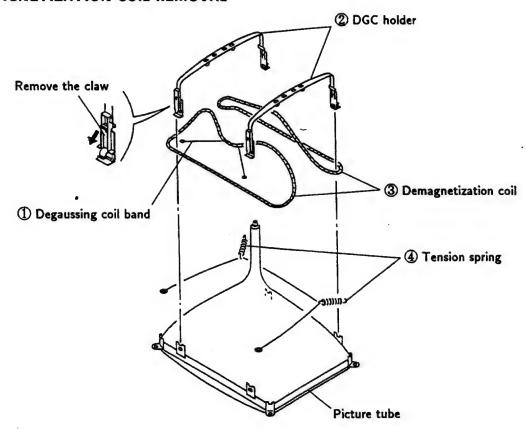
## 2-3. SERVICE POSITION



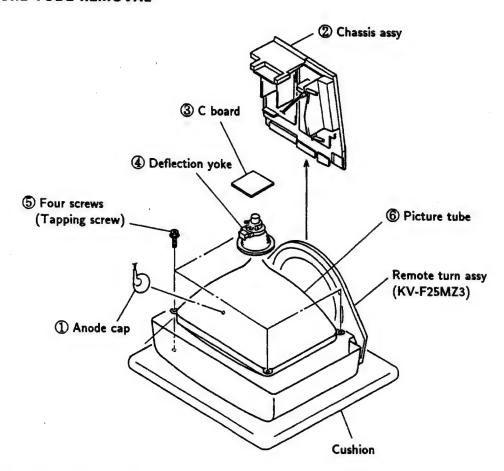
## 2-4. EXTENSION CABLE (KV-F25Z3)



## 2-5. DÉMAGNETIZATION COIL REMOVAL



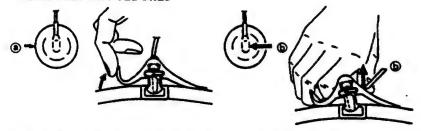
## 2-6. PICTURE TUBE REMOVAL



## REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

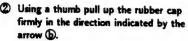
## REMOVING PROCEDURES



1 Turn up one side of the rubber cap in the direction indicated by the arrow (2).

## HOW TO HANDLE AN ANODE-CAP

- Don't hurt the surface of anode-caps with sharp shaped material!
- Don't press the rubber too hard in order not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
- 3 Don't turn the foot of rubber over hard! The shatter-hook terminal will stick out or hurt the rubber.





3 When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ©.

**Anode button** 





# SECTION 3 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control . . . . . . . . . . . RESET BRIGHTNESS control . . . . . . . . . center

Perform the adjustments in order as follows:

- 1. Beam Landing
- 2. Convergence
- 3. Focus
- 4. White Balance

Note: Test Equipment Required.

- 1. Color-bar/Pattern Generator
- 2. Degausser
- 3. Oscilloscope

## Preparations:

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

## 3-1. BEAM LANDING

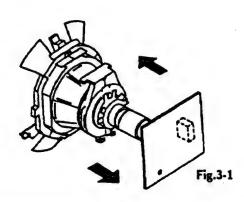
- 1. Input the white signal with the pattern generator.

  Contrast
  Bightness normal
- 2. Set the pattern generator raster signal to red.
- 3. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.

(See Figures 3-1 through 3-3.)

- 4. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
- 5. Switch the raster signal to blue, then to green and verify the condition.
- 6. When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- 7. If the beam does not land correctly in all the corners, use a magnet to adjust it.

  (See Figure 3-4.)



## **Purity control**

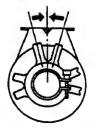


Fig.3-2

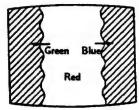
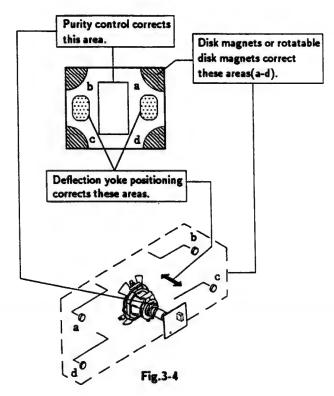


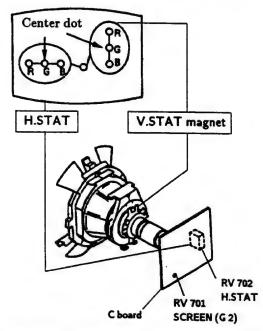
Fig.3-3



## 3-2. CONVERGENCE

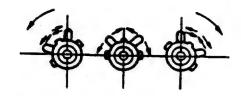
## Preparation:

- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.
- (1) Horizontal and Vertical Static Convergence

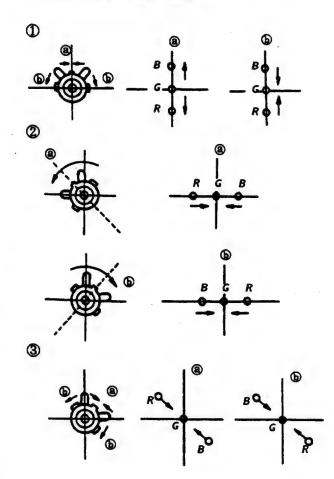


- (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
- (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
- 3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.
  (In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

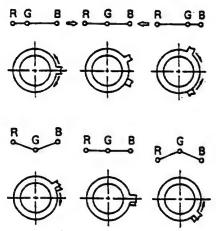
 Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the @ and @ arrows, the red, green, and blue points move as shown below.



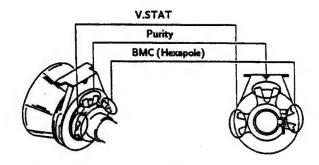
Operation of BMC (Hexapole) Magnet



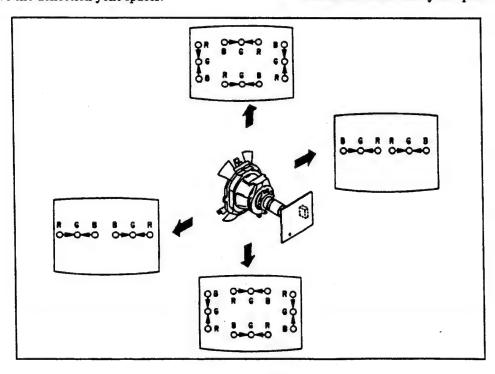
 The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
 Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

# (2) Dynamic Convergence Adjustment Preparations:

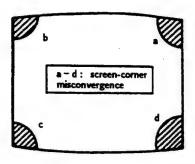
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
- 1. Slightly loosen the deflection yoke screws.
- 2. Remove the deflection yoke spacer.

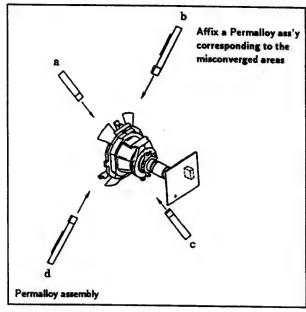


- · Y separation axis correction magnet adjustment
- 1. Receive the cross-hatch signal, and adjust [PIC] to "MIN" and [BRT] to "standard".
- 2. Adjust the deflection yoke to the upright condition when it hits the CRT.
- Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
- 4. Return the deflection yoke to its original position.
- 3. Move the deflection yoke as shown in the figure below and optimize the convergence.
- 4. Tighten the deflection yoke screws.
- 5. Install the defelection yoke spacer.



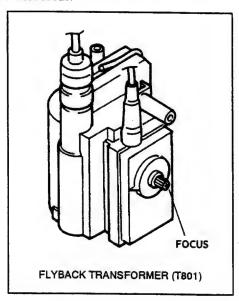
## (3) Screen-corner Convergence





## 3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



## 2. AN ITEM OF ADJUSTMENT

Item	Adjustment	St	andard	DATA		
number	item	50 H	z	60 H	İz	Note
HAIHOEL	item	Normal	Wide	Normal	Wide	
05	SBR	1F	1F	1F	1F	SUB- BRIGHTNESS
07	GDR		1F			G Drive
08	BDR		1 F			B Drive
09	GCT		07			G CUT-OFF
0 A	BCT		07			B CUT-OFF

## b . METHOD OF CANCELLATION FROM SERVICE MODE

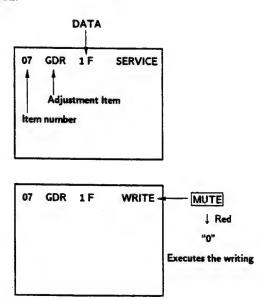
Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

## c. METHOD OF WRITE FOR MEMORY

- 1) Set to Service Mode.
- 2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
- 3) Press MUTE button indicate WRITE (RED) on screen.
- 4)Press 0 button to write into memory.

## d. MEMORY WRITE CONFIRMATION METHOD

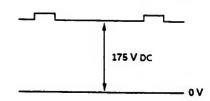
- After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- Call the adjusted items again, confirm they were adjusted.



# 3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

## 1. G2 (SCREEN) ADJUSTMENT (RV701)

- 1) Set the PICTURE and BRIGHTNESS to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Set to Service Mode.
- 4) Change BLU data of the item number "4F" from "01" to "00". (To turn off Blue Black.)
- 5) Press MUTE, and 0 to write the data in the memory.
- 6) Connect R, G, and B of the C board cathode to the oscilloscope.
- 7) Adjust G2 (RV701) volume to the value below.



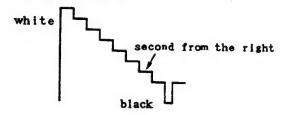
- 8) Re-set BLU data of the item number "4F" from "00" back to "01".
- Press MUTE, and 0 to write the data in the memory.

## 2. WHITE BALANCE ADJUSTMENTS

- 1) Set to service mode.
- 2) Input an entire white signal.
- 3) Set the PICTURE to minimum.
- 4) Select SBR(05) with 1 and 4, and then set the level to minimum with 3 and 6.
- 5) Select GCT(09) and BCT(0A) with and 4.
  And adjust the level with and for the best white balance.
- 6) Set the PICTURE to maximum.
- 7) Select GDR(07) and BDR(08) with 1 and 4 and adjust the level with 3 and 6 for the best white
- 8) Write into the memory by pressing  $\overline{\text{MUTE}} \rightarrow \text{then } 0$ .

## 3. SUB BRIGHT ADJUSTMENT

- 1) Set to service mode.
- Input a staircase signal of black and white from the pattern generator.
- 3) BRIGHTNESS ··· RESET PICTURE ······ minimum
- 4) Select SBR(05) with land 4, and adjust SBR level with and 6 so that the stripe second from the right is dimly lit.



# SECTION 4 SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem. In this case, one of the LED's responding to the problem device will flicker defined number of times.

Flickering is operated by lighting the LED's for 60ms and turning them off for 600ms.

The flickering frequency responding to each failed device is shown below.

Device	NONVOLATILE MEMORY	AV SWITCH (CXA1545S)	MAIN Y/C (TDA9145)	RGB JUNGLE (CXA1587)	DY DSP (CXD2018)	SURROUND PROCESSOR (TA8776N)
Flickering Frequency	1	2	3	4	5	6

All the devices are checked one after another from the left on the table.

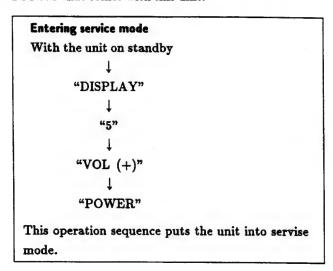
If an error is found, the responding LED will start flickering.

So, if more than 2 devices are failed, the one on the left side will start flickering first.

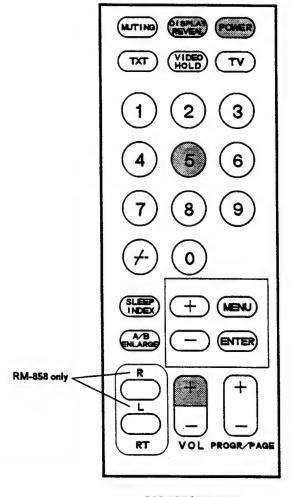
# SECTION 5 CIRCUIT ADJUSTMENTS

## 5-1. ADJUSTMENTS WITH COMMANDER

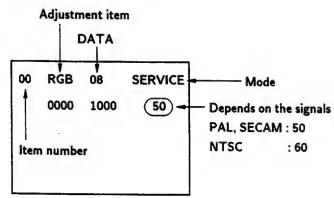
Service adjustments are made with the RM-857 and RM-858 that comes with this unit.

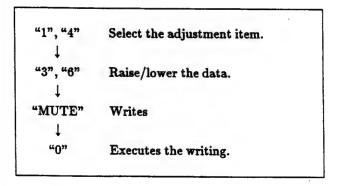


"1", "4"	Raise/lower the service item number
"3", "6"	Raise/lower the data
"MUTE"	Writes
<b>"0"</b>	Executes the writing
"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard state
"9"	H-FRE automatic adjustment
"5", "0"	Service data initialization (Besure not
	to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz,
	or vice versa.



The screen display is:



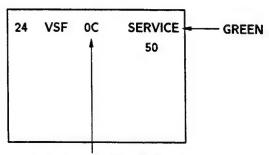


## 5-2. ADJUSTMENT METHOD

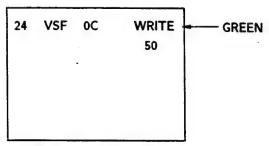
Item Number 24

This explanation uses V-SHFT as an example.

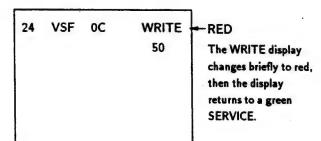
- 1. Select 24 V-SHFT with the "1" and "4" buttons.
- Raise/lower the data with the "3" and "6" buttons.
- 3. Select the optimum state. (The standard is for 0F PAL reception.)
- 4. Write with the MUTE button. (The display changes to blue WRITE.)
- Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Adjusted with "3" and "6" buttons



Written with "MUTE"



Write excuted with "0"

Use the same method for Items Number 00-5E. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

Note: In "WRITE", the data of all items are wrote together to memory.

Note: In item 02 50Hz, or item 03 60Hz, it operates normally in spite of the 50Hz or the 60Hz of the input signal. Therefore be sure to adjust data according to the input signal.

14	A 41.			Standar	d DATA				
ltem number	Adjustment	Data range	50	Hz	60	Hz	Note	Device	
number	İtem	J	Normal	Wide	Normal	Wide	·	Device	
00	RGB	00~0F	07	07	07	07	RGB PICTURE	(CXA1587S)	
01	SCN	00~0F	08	06	08	06	SUB-Contrast	(CXA1587S)	
02	VM	00~03	02	02	02	02	VM Level	(CXA1587S)	
03	SCL	00~0F	08	07	08	07	SUB-COLOR		
04	SHU	00~0F	08	08	08	08	SUB-HUE	(CXA1587S)	
05	SBR	00~3F	1F	1F	1F	1F	SUB-BRIGHTNESS	(CXA15875)	
06	ABL	00~03	03	03	03	03		(CXA1587S)	
	7.52	00 00	00	05	1 03	03	ABL Mode	(CXA1587S)	
07	GDR	00~3F	Ì	1	F		G Drive	/CV 44 F07C)	
80	BDR	00~3F			F		B Drive	(CXA1587S)	
09	GCT	00~0F			7		G CUT-OFF	(CXA15875)	
0A	BCT	00~0F			7		B CUT-OFF	(CXA1587S)	
0B	AKR	00~FF			F			(CXA1587S)	
0C	AKG	00~FF			F		AKB OFF R CUT-OFF	(CXA15875)	
0D	AKB	00~FF			F		AKB OFF G CUT-OFF	(CXA1587S)	
	, Alto	00	50	Hz	60	u.	AKB OFF B CUT-OFF	(CXA1587S)	
0E	GMA	00~0F		C	00			(	
0F	DCT	00~03		00	0		γ control	(CXA1587S)	
10	DPI	00~03		_	1	-	DCTRAN	(CXA1587S)	
11	YFI	00~03 00~3F		)3	0		D-PIC	(CXA1587S)	
12	SHL	00~3F 00~01		22	2		Y Filter Adjust	(CXA1587S)	
13				01	0		SHP-LIM	(CXA15875)	
	YDL	00~0F		)F	0	-	Y Delay Time	(CXA1587S)	
14	YSW	00~03		)1	0		Y-SW OUT	(CXA1587S)	
15	HSH	00~3F		23	2,	4	H Shift	(CXA15875)	
			5 T		6 T	6 V			
16	POV	00~0F	08	08	08	08	Pre-Over	(CXA1587S)	
17	SHF	00~03	02	02	02	02	SHP-F0	(CXA1587S)	
18	SSH	00~03	01	02	02	03	SUB-Sharpness	(CXA15875)	
							·	( = = = = = = = = = = = = = = = = = = =	
19	RMT	00~01		-	)0		R-Mute	(CXA1587S)	
1A	GMT	00~01			90		G-Mute	(CXA15875)	
1B	BMT	00~01		(	00		B-Mute	(CXA15875)	
1C	AG1	00~01		(	00		Aging 1 (White)	(CXA15875)	
1D	AKF	00~01		(	00		AKB-OFF	(CXA15875)	
			1	<b>V</b>	Vic	leo		(CVV13013)	
1E	SMD	00~01	C	0		0	Scan Mode	(CXA1587S)	
1F	VEX	00~01	0	Ю.	0	0	V-Extension	(CXA15875)	
20	AFC	00~03	. 0	3	0	2	AFC Loop Gain	(CXA15875)	
21	AFF	00~01		0	1	Ō	AFC-OFF		
22	RFP	00~01		0		0		(CXA1587S)	
							Reference Position	(CXA1587S)	
23	VSZ	00~3F	1E	1E	1A	1A	V-Size	(CXD2018Q	
24	VSF	00~3F	2E	2E	32	32	V-Shift		
25	SCR	00~F	08	08	08	08	S-Correction	(CXD2018Q	
26	VLN	00∼F	08	08	08	08	V-Linearity	(CXD2018Q	
27	HSZ	00~3F	OC .	0C	0E	0E		(CXD2018Q	
28	PAP	00~3F	2E	2E	2E	2E	H-Size	(CXD2018Q	
	10	00 - 31				22	Pin-Amp	(CXD2018Q	
29	TLT	00~0F	09	09	09	09			
2A	UCP	00~0F	0A	0A	0A	0A	Tilt	(CXD2018Q	
	LCP	00~0F	0C	OC	0C		Upper Corner Pin	(CXD2018Q	
	VBW		08	08		0C	Lower Corner Pin	(CXD2018Q	
2B	VEVV	00~0F 00~0F	08	08	08	80	V-Bow	(CXD2018Q	
2C				04	08.	08	V-Angle	(CXD2018Q	
2C 2D	VAG		_ ^4 i	U4	04	04	HV-Comp-V	(CXD2018Q	
2C 2D 2E	VAG HVV	00~07	04			00	UV C II		
2C 2D	VAG		04 00	00	00		HV-Comp-H	(CXDS018G	
2C 2D 2E 2F	VAG HVV HVH	00~07 00~07		00	************************	***********			
2C 2D 2E 2F	VAG HVV HVH	00~07 00~07 00~07		00	3	***********	Frame Color	(CXD2018Q (SDA 9188)	
2C 2D 2E 2F	VAG HVV HVH	00~07 00~07	00	00	3 1				
2C 2D 2E 2F 30 31	VAG HVV HVH FCL FON	00~07 00~07 00~07 00~01	50	00 0 0 Hz	3 1 60		Frame Color	(SDA 9188)	
2C 2D 2E 2F 30 31	VAG HVV HVH FCL FON	00~07 00~07 00~07 00~01 00~07	50	00 0 0 Hz	3 1		Frame Color	(SDA 9188) (SDA 9188)	
2C 2D 2E 2F 30 31 32 33	VAG HVV HVH FCL FON DLY P-V	00~07 00~07 00~07 00~01 00~07 00~0F	50 0	00 0 0 Hz 0 7	3 1 60	0	Frame Color Frame ON	(SDA 9188) (SDA 9188)	
2C 2D 2E 2F 30 31 32 33 34	VAG HVV HVH FCL FON DLY P-V PVS	00~07 00~07 00~07 00~01 00~07 00~0F 00~07	50	00 0 0 Hz 0 7	3 1 60	7	Frame Color Frame ON Select Delay LL 3P V read delay	(SDA 9188) (SDA 9188) (SDA 9188) (SDA 9188)	
2C 2D 2E 2F 30 31 32 33	VAG HVV HVH FCL FON DLY P-V	00~07 00~07 00~07 00~01 00~07 00~0F	50 0	00 0 0 Hz 0 7	3 1 60 0	0 7 4	Frame Color Frame ON Select Delay LL 3P	(SDA 9188) (SDA 9188) (SDA 9188)	

Item	Adjustment		Standar	d DATA			
number		Data range	50 Hz	60 Hz	Note	Device	
	iiciii		Normal Wide Normal Wide			Device	
37	CTR	00~0F	° 0	A	Contrast	(SDA 9188)	
38	EPL	00~01	0	1	External PLL	(SDA 9188)	
39	FWV	00~01	0	1	Frame Width V	(SDA 9188)	
3A	FWH	00~01	0	1	Frame Width H	(SDA 9188)	
3B	DVI	00~0F	0	7	Setting Delay VSI	(SDA 9188)	
3C	DVP	00~0F	0	F	Delay VSP Pulse	(SDA 9188)	
3D	BRT	00~0F	0	С	Frame BRIGHT Data	(SDA 9188)	
3E	LEV	00~0F	0	0	Level Adjust	(TDA9840)	
3F	STR	00~3F	0	2	Stereo Adjust	(TDA9840)	
		•				(10/3040)	
40	AXG	00~01		0	AUX Output Gain	(TDA8204)	
41	AXM	00~01		0	AUX Output Mute	(TDA8204)	
42	VCX	00~01	0	0	VCXO free run	(TDA8204)	
43	ERC	00~01	-	0	Error count Time	(TDA8204)	
44	MXE	00~01		0	MAX. allowed Error	(TDA8204)	
45	SRO	00~01		0	SRO set Bit	(TDA8204)	
46	ATO	00~00	0	_	Auto Selection	(TDA8204)	
47	SYS	00~01		0	System select	(TDA8204)	
48	FSW	00~03	0	0	Force Switch	(TDA8204)	
49	SYN	00~01	0	1	Synthesizer	(TDA8204)	
4A	VCR	00~01	0	0	VCC Reference Sw	(CXP1315P)	
4B	SEL	00~FF	5	F	Separation Level	(CXP1315P)	
4C	ТХР	00~0F	0	7	Teletext Picture	(Teletext μ-Con	
4D	ODL	00∼FF	1	^			
4E	OSH .	00~3F	0	-	Power ON Delay	(CXP80424)	
4F	BLU	00~01			OSD Position H	(CXP80424)	
50	ROC	00~01 00~0F	0		Blue Back Feature	(CXP80424)	
51	ROS	00~07	0	•	Center of Rotation	(CXP80424)	
	1103	00~01	٥	•	Step Width	(CXP80424)	
52	HTR	00∼3F	1F 1F	1F 1F	H Trapezoid	(CXP80424)	
53	MUT	00~01	0	1	No Sync. Mute	(CXP80424)	
54	DID	00~01	0	0	Disable Degauss	(CXP80424)	
55	OP0	00~FF	6	D	Option 0	(CXP80424)	
56	OP1	00~0F	0	1	Option 1	(CXP80424)	

## \*1: Input data are different according to models.

ltem	CCD	Text	PinP	Jpn	Nicm	W.G	Mts	Comb
KV-F25MF1	0	0	0	0	0	0	0	1
KV-F25MZ 3	0	1	0	0	1	1	0	1

## \*2 : Input data are different according to models.

ltem	-	_	-	-	Mono	Tilt	-	Chin
KV-F25MF1	0	0	0	0	0	0	0	1
KV-F25MZ 3	0	0	0	0	0	0	0	1

## 5-3. PICTURE QUALITY ADJUSTMENTS

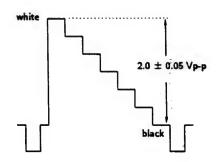
Item Numbers 03-05, 18

03 SCL 04 SHU 05 SBR 18 SSH Set to the standard values.

## 5-4. A BOARD ADJUSTMENT

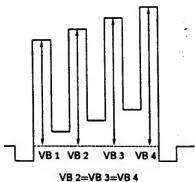
## SUB CONTRAST ADJUSTMENT (SCN)

- 1. Receive a PAL color-bar.
- Put DC 3.0V to the pin (ABL IN) of IC 304, A board. Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
- Connect an oscilloscope to the pin (B (R OUT) of CN118, A board.
- 4. Set to Service Mode and select 01 (SCN) with 1 and 4 of the commander to adjust to 2.0 ± 0.05 V.
- 5. Press MUTING → 0 of the commander to write the data.
- 6. Receive a NTSC color-bar and adjust 01 (SCN) same value as PAL.
- 7. Receive the PAL color-bar to set to WIDE mode by pressing MENU. Then set to Service Mode and adjust 01 (SCN) to write the 2 step dropped value of the step 4.
- 8. Receive the NTSC color-bar and adjust as step 7.



## SUB COLOR ADJUSTMENT (SCL)

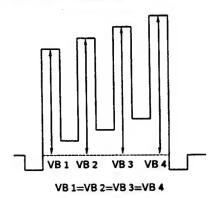
- Receive a PAL color-bar.
   Set to the following condition:
   PIC 100%, BRT 50%, COL 35%
- Connect an oscilloscope to the pin (B OUT) of CN118, A board.
- 3. Set to Service Mode and select 03 (SCL) with 1 and 4 of the commander to adjust to VB2=VB3= VB4 with 3 and 6.
- 4. Press MUTING → 0 of the commander to write the data.
- Adjust as step 4 and 5 by receiving NTSC colorbar.



- 6. Receive the PAL color-bar to set to WIDE mode by pressing MENU. Then set to Service Mode and adjust 03 (SCL) to write the 1 step dropped value of the step 4.
- 7. Receive the NTSC color-bar and adjust as step 6.

## SUB HUE ADJUSTMENT (SHU)

- 1. Receive a NTSC color-bar.
- Connect an oscilloscope to the pin (B OUT) of CN 118, A board.
- 3. Select 04 (SHU) with 1 and 4 of the commander by setting to Service Mode and adjust to VB 1=VB 2 =VB 3=VB 4 with 3 and 6.



- 4. Press MUTING → 0 of the commander to write the data.
- 5. Set to WIDE Mode by MENU button to write the same value as the step 3.

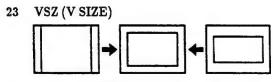
## Y. FILTER ADJUSTMENT (YF1)

- 1. Set to Service Mode.
- 2. Select 14 (Y. SW) with the land 4 of the commander to set the data "3" with 3 and 6.
- 3. Put SINE wave of 4.43 MHz to the pin ② (YIN) of IC304.
- 4. Connect an oscilloscope to the pin ① of CN105, A
- 5. Adjust so that the waveform is minimum by selecting 11 (YF1) with 3 and 6.

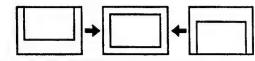
  Change back 14 (Y. SW) to data "1".
- 6. Press MUTING → 0 of the commander to write the data.

## 5-5. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D



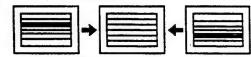
24 VSF (V SHIFT)



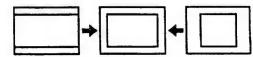
25 SCR (VERTICAL S correction)



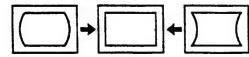
26 VLN (V LINEARITY)



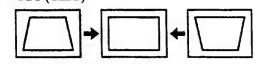
27 HSZ (H SIZE)



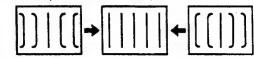
28 PAP (PIN AMP)



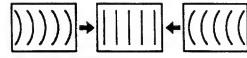
29 TLT (TILT)



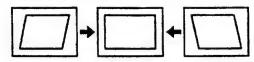
- 2A UCP (Upper Corner Pin)
- 2B LCP (Lower Corner Pin)



C VBOW (V-BOW)

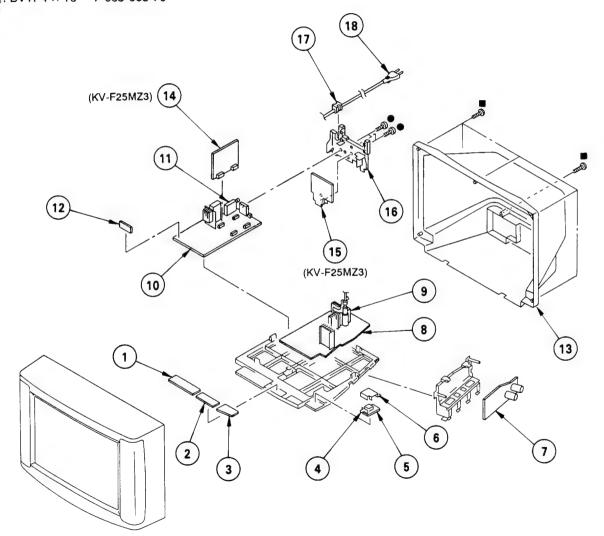


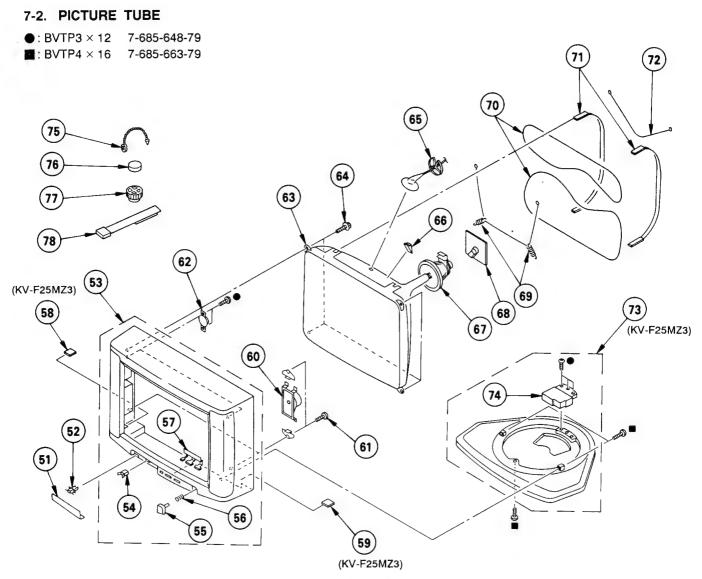
D VAG (V-ANGLE)



## 7-1. CHASSIS

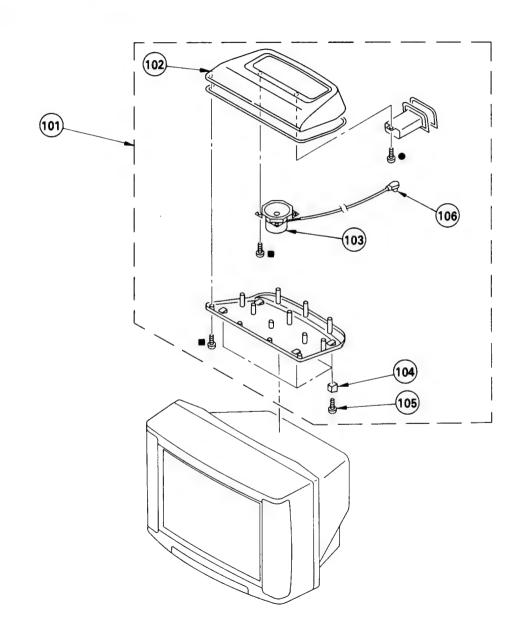
●: BVTP3 × 12 7-685-648-79 ■: BVTP4 × 16 7-685-663-79





## 7-3. SPEAKER (KV-F25MZ3)

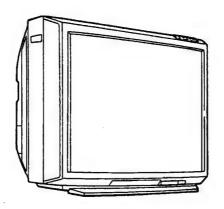
- ●: BVTP3 × 12 7-685-648-79
- ■: BVTP4 × 16 7-685-663-79



# KV-K29CF1

# SERVICE MANUAL

PX Model Chassis No. SCC-G98A-A



# G3F CHASSIS

MODELS OF TH	IE SAME SERIES
KV-K29CF1	KV-K21MF1/K25MF1
KV-K29MF1	KV-K25MF1J/KV-K29MF1J
KV-K25SN21/K29SN21	

## **SPECIFICATIONS**

Power requirements
Power consumption

Television system Color system Channel coverage

Power requirements 110-240 V AC, 50/60Hz

171 W

B/G, I, D/K, M

PAL, PAL 60, SECAM, NTSC 4.43, NTSC 3.58

B/G

VHF: E2 to E12/UHF: E21 to E69/

CATV: S01 to S03, S1 to S41

UHF : B21 to B68/

CATV: S01 to S03, S1 to S41

D/K

VHF: R1 to R12/UHF: R21 to R60/

CATV: S01 to S03, S1 to S41

M

VHF: A2 to A13/UHF: A14 to A79/

CATV: A-8 to E, G to W+25, W+27 to W+84

75-ohm external antenna terminal

for VHF/UHF

Audio output (speaker)

Number of terminal

it (speaker) 13W×2

Video Input: 3 Output: 1 Audio Input: 3 Output: 1

Audio Input: 3 S1-Video Input: 2

Y: 1 Vp-p, 75 ohms, unbalanced,

sync negative

G: 0.286 Vp-p, 75 ohms

Super Trinitron

Picture tube S: Tube size 2: Screen size 66

Dimensions (W/H/D) Weight

Supplied accessories

29-inch measured diagonally 68-cm measured diagonally 694×578×527 mm

50 kg

Remote Commander RM-845P (1)

Size AA (R6) battery (1)

U/V mixer

Optional accessories TV stand SU-K1G

Magic Commander RM-829, RM-848

Design and specifications are subject to change without notice.



Antenna

TRINITRON. COLOR TV

## KV-K29CF1

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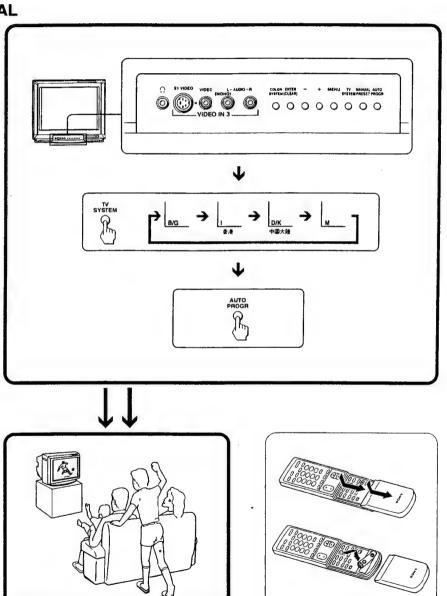
## CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

## SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK A ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

# SECTION 1 GENERAL

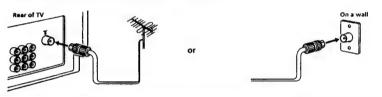


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## 1-1. HOOKING UP

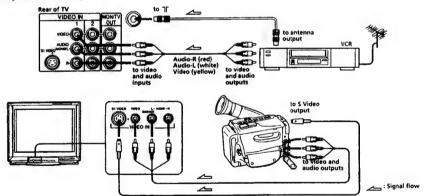
## Connecting a VHF antenna or a combination VHF/UHF antenna - 75-ohm coaxial cable (round)

Attach an optional IEC antenna connector to the 75-ohm coaxial cable. Plug the connector into the \ (antenna) socket at the rear of the TV.



#### Hooking up to optional equipment

You can connect optional audio/video equipment to this TV such as a VCR, multi disc player, camcorder, headphones, or stereo system.



#### When connecting a monaural VCR

Connect the yellow plug to VIDEO and the black plug to AUDIO-L (mono).

#### If both S1-Video and video signals are input

The S1-Video input signal is selected. To view a video signal, disconnect the S1-Video connection.

#### Note on the S1-Video signal

When inputting the SI-Video signal through the VIDEO IN 1 or VIDEO IN 3 jack, set wide mode to OFF if you do not want to display the picture in wide mode (see page 17).

#### Note on the video input

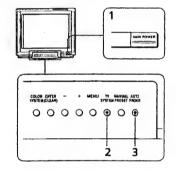
When no signal is input, the screen becomes blue.

## 1-2. PRESETTING CHANNELS

You can preset TV channels easily by storing all the receivable channels automatically. You can also preset channels manually or disable program positions.

## Presetting channels automatically

You can preset up to 100 TV channels in numerical sequence from program position 1.

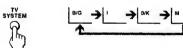


1 Press MAIN POWER.

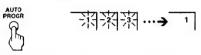


When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

Press TV SYSTEM to select your local TV system.



## 3 Press AUTO PROGR.



#### To start presetting channels automatically from the specified program position

- 1 Press MANUAL PRESET.
- 2 Press TV SYSTEM to select your local TV system.
- 3 Press PROGR +/- to select the program position.
- 4 Press AUTO PROGR.

#### Presetting channels manually

To change the program position for a channel or to receive a channel with a weak signal, preset the channel manually.

Example: To preset a channel in program position 8

- 1 Press MANUAL PRESET.
- 2 Press PROGR +/- until "8" appears.
- 3 Press TV SYSTEM to select your TV system.
- 4 Press + or until the channel you want
- 5 Press MANUAL PRESET.

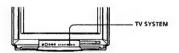
## To preset other channels

Repeat steps 1 to 5.

## If the TV system is not properly selected

The color of the picture may be poor and/or the sound may be noisy. In this case, select the appropriate TV system.

- 1 Press PROGR +/- to select the program position.
- 2 Press TV SYSTEM until the picture and sound become normal.



. The setting of the TV SYSTEM is memorized for each program position.

EN

5

## Disabling program positions

By disabling unused or unwanted program positions, you can skip those position when you press PROGR

Example: To disable program position 8

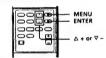
- 1 Press PROGR +/- until "8" appears.
- 2 Press MANUAL PRESET.
- 3 Press ENTER (CLEAR) on the TV. To disable other program positions, repeat steps 1 to 3.
- 4 Press MANUAL PRESET.

#### To cancel the skip setting

Preset the channel manually or automatically again.

## 1-3. CHANGING THE MENU LANGUAGE

If you prefer Chinese to English, you can change the menu language. You can use buttons on both the remote commander and the TV.



1 Press MENU.



VIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

2 Press △ + or ▽ - to move the cursor (►) to LANGUAGE.



VIDEO CONTROL AUDIO CONTROL SET UP ► LANGUAGE DEMO

3 Press ENTER.



LANGUAGE ► ■ENGLISH CHINESE/ФХ

4 Press △ + or ▽ - to select CHINESE.



LANGUAGE ENGLISH CHINESE/中文

5 Press ENTER.



语直 英文/ENGLISH ▶■中文

6 Press MENU to return to the normal screen.



## 1-4. INTRODUCING THE MENU

You can use the on-screen menus to set the picture quality, sound, and other settings. You can use buttons on both the remote commander and the TV to operate

PVIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO SET UP
WIDE: OFF
AV OUT: MONITOR
SURROUND: OFF
VIDEO NR: OFF
TILT CORRECTION: 0 VIDEO CONTROL DYNAMIC MIDDLE AUDIO CONTROL NEWS STANDARD

PERSONAL ADJUSTMENT

PERSONAL ADJUSTMENT BASS INHIMINAH 80 TREBLE HIMINAH 80

## Getting back to the previous menu

SOFT PERSONAL

HUE

ADJUSTMENT

PERSONAL ADJUSTMENT

BRIGHT HUMBH

Move the cursor (▶) up to the first line of each menu (except the main menu), and press ENTER.

#### Cancelling the menu screen

Press MENU.

(\*KV-K29MN11/K29MH11 only)

#### Notes

· If more than 90 seconds elapse after you press a button, the menu screen disappears automatically.

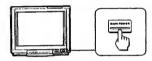
LANGUAGE

●ENGLISH CHINESE/中文

Ġ

## 1-5. WATCHING THE TV

## 1 Press MAIN POWER to turn the TV on.



When the TV is in standby mode after pressing MAIN POWER, press POWER on the TV or remote commander.

## 2 Select the TV channel you want to watch.

#### To select a channel directly

Press a number button.



To select a two-digit channel, press "-/--" before the number buttons.

For example: to select channel 25, press "-/--," then "2" and "5."



To scan through channels

Press PROGR +/- until the channel you want appears.

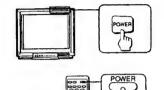


3 Press VOL +/- to adjust the volume.



## Switching off the TV

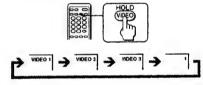
To switch off the TV temporarily, press POWER.



To switch off the TV completely, press MAIN POWER. If the main power is turned off in standby mode, the STANDBY indicator continues to light up for a while.

## Watching the video input

Press VIDEO/HOLD.



To watch TV, press TV.



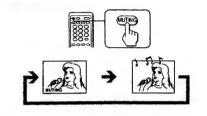
## Switching back quickly to the previous channel

Press JUMP.



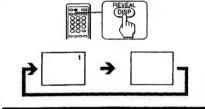
## Muting the sound

Press MUTING.



## Displaying on-screen information

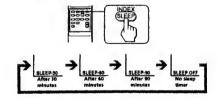
Press DISP/REVEAL.



## **Setting the Sleep Timer**

You can set the TV to turn off automatically after the length of time you specify elapses.

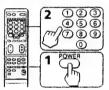
#### Press SLEEP/INDEX.



To cancel the Sleep Timer, press SLEEP/INDEX repeatedly until "SLEEP OFF" appears, or turn the TV

## 1-6. SETTING THE REMOTE COMMAND MODE

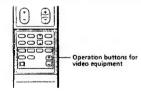
You can use the supplied remote commander to operate this TV and Sony video equipment, such as a VCR or multi disc player. To operate Sony video equipment, first set the remote command mode for the video equipment you want to use.



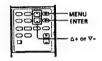
- 1 Press and hold the POWER button.
- 2 Press the number buttons that correspond to the remote command mode.

Mode Number buttons	Remote command mode			
0 then 1	VTR1 (e.g. Beta format VCR)			
0 then 2	VTR2 (e.g. 8 mm format VCR)			
0 then 3	VTR3 (e.g. VHS format VCR)			
0 then 4	MDP (multi disc player)			

After setting the remote command mode, you can use the following buttons to operate the video equipment.



#### 1-7. ADJUSTING THE PICTURE



1 Press MENU.



PVIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

2 Press △+ or ▽- to move the cursor (>) to VIDEO CONTROL.



PVIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE DEMO

3 Press ENTER.



VIDEO CONTROL DYNAMIC MIDDLE SOFT

4 Press △+ or ∇- to select the setting, and press ENTER.

Select	To
DYNAMIC	Display more contrast picture
MIDDLE	Display normal contrast picture
SOFT	Display picture suitable for movies and video games
PERSONAL	Display the picture that is adjusted using ADJUSTMENT
ADJUSTMENT	Make specific adjustments. See "Adjusting the picture precisely."

5 Press MENU to return to the normal screen.

#### Adjusting the picture precisely

You can adjust the picture quality precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

- 1 Press MENU.
- 2 Press △+ or ∇− to move the cursor (►) to VIDEO CONTROL, and press ENTER.
- 3 Press △+ or ∀– to move the cursor (►) to ADJUSTMENT, and press ENTER.
- 4 Press △+ or ∇- to move the cursor (►) to the item you want to adjust, and press ENTER.

PERSON	AL ADJUSTM	ENT
<b>▶PICTURE</b>	191811111111111111111	100
COLOR	1341411111	50
BRIGHT	DHHIMM	50
HUE	ammodenium.	0
SHARP	\$318383438\$\frac{1}{2} \rightarrows	70

5 Press △+ or ∇- to adjust the item, and press

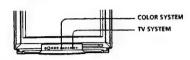
item	Press ∆+ to	Press ∇- to
PICTURE	Increase picture contrast	Decrease picture contrast
COLOR	Increase color intensity	Decrease color intensity
BRIGHT	Brighten the picture	Darken the picture
HUE	Make skin tones become greenish	Make skin tones become reddish
SHARP	Sharpen the picture	Soften the picture

- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

. You can adjust HUE for NTSC system only.

#### If the color of the picture is abnormal

When receiving programs through the T terminal: Press TV SYSTEM or COLOR SYSTEM until the color becomes normal.



. Normally set COLOR SYSTEM to AUTO.

#### 1-8. ADJUSTING THE SOUND



1 Press MENU.



VIDEO CONTROL AUDIO CONTROL SET UP LANGUAGE

2 Press △+ or ∇- to move the cursor (►) to AUDIO CONTROL.



VIDEO CONTROL FAUD O CONTROL SET UP LANGUAGE

3 Press ENTER.



AUDIO CONTROL NEWS STANDARD PERSONAL

4 Press △+ or ∇- to select the sound that you want, and press ENTER.

Select	То
MUSIC	Listen to music programs.
NEWS	Listen to news programs. A person's voice can be heard clearly.
STANDARD	Listen to sound other than music or news.
PERSONAL	Listen to the sound that is adjusted using ADJUSTMENT.
ADJUSTMENT	Make specific settings. See "Adjusting the sound precisely."

**5** Press MENU to return to the normal screen.

#### Adjusting the sound precisely

You can adjust the sound precisely with the ADJUSTMENT option. The adjusted settings are stored in the PERSONAL option.

1 Press MENU.

ò

- 2 Press △+ or ▽- to move the cursor (►) to AUDIO CONTROL, and press ENTER.
- 3 Press △+ or ▽- to move the cursor (►) to ADJUSTMENT, and press ENTER.
- 4 Press △+ or ∇- to move the cursor (►) to the item you want to adjust, and press ENTER.



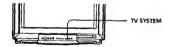
5 Press △+ or ∇- to adjust the item, and press ENTER.

Item	Press ∆+ to	Press ∇- to
BASS	Increase the bass sound	Decrease the bass sound
TREBLE	Increase the treble sound	Decrease the treble sound
BALANCE	Increase the volume of right speaker	Increase the volume of left speaker

- 6 To adjust other items, repeat steps 4 and 5.
- 7 Press MENU to return to the normal screen.

#### If the sound is distorted or noisy

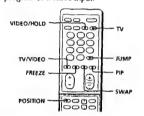
When receiving programs through the T terminal: Press TV SYSTEM until the sound becomes clear.



# 1-9. WATCHING TWO PICTURES SIMULTANEOUSLY

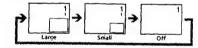
#### ■ KV-K29CF1 only

With this function you can display a Picture In Picture (PIP) screen (small picture) within the main picture of a TV program or a video input.



#### Displaying PIP

#### Press PIP.



The channels are displayed as follows: Main screen: green

PIP screen: white

# Selecting a TV program or video in the main screen

To select a TV program, press TV and select the channel.

To select a video, press VIDEO/HOLD to select a video input.

# Selecting a TV program or video in the PIP screen

To select a TV program, press TV/VIDEO to select TV then select the channel.

To select a video, press TV/VIDEO to select a video input

#### Note

 You can display different TV programs simultaneously using the VCR's built-in tuner.

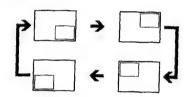
# Swapping pictures between the main and PIP screens

#### Press SWAP.



#### Changing the position of the PIP screen

#### Press POSITION.



#### Freezing the PIP screen

#### Press FREEZI

To restore the normal picture, press FREEZE again.

#### Notes

- When you display a VCR picture on the PIP screen at a speed other than normal speed, the picture may be noisy depending on the VCR. The picture can be improved by selecting the smaller size of the PIP screen.
- If you display different color systems (PAL, PAL 60, SECAM, NTSC) on the main screen and the PIP screen, the size of the PIP screen may be different and the PIP picture may be noisy.
   This is not caused by the malfunction of the TV.

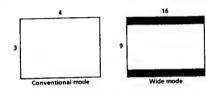
13

15

#### 1-10. CUSTOMIZING THE TV (SET UP)

#### Setting wide mode

When receiving the signal conforming to wide mode (S1-Video signal), you can change the size of the picture on the screen.



1 Press MENU.

9

2 Press △+ or ∇- to select SET UP, and press

SET UP  WIDE:  AV OUT:  SURROUND:  VIDEO NR:	OFF MONITOR OFF
VIDEO NR	

- 3 Press △+ or ∇-to select WIDE, and press
- 4 Press △+ or ∇- to select the wide mode to suit the size of the picture you want to display on the TV screen.

Select	To
ON	Display the picture on the screen in wide mode
AUTO	Display the picture on the screen in wide mode automatically when receiving the S1-Video signal through the S1-Video input jack
OFF	Display the picture on the screen in conventional size

 When the picture is in wide mode, the bright lines which are used for adjusting the CRT at optimum level appear at the top

#### Using the AV OUT (advanced rec-out) terminal

You can select the output signal from the MON/TV OUT jacks at the rear of the TV to the TV signal or the signal of the picture you are watching as a monitor.

- 1 Press MENU.
- 2 Press △+ or ∇– to select SET UP, and press

SET UP WIDE: AV OUT: SURROUND: VIDEO NR:	
--	--

- 3 Press △+ or ∇- to select AV OUT, and press
- 4 Press ∆+ or ∇- to select the output signal, and press ENTER.

Select	To	
TV	Output the TV signal.	
MONTTOR	Output the signal of the picture you are watching as a monitor.	

#### Selecting the surround sound

You can enjoy a surround sound effect that is like being in a music hall when receiving stereo signals.

- 1 Press MENU.
- 2 Press △+ or ∇- to select SET UP, and press

SET UP	
►WIDE:	OFF
AV OUT:	MONITOR
SURROUND:	
VIDEO NR:	
V 1000 1411.	0, 1

- 3 Press △+ or ∇- to select SURROUND, and press ENTER.
- 4 Press △+ or ∇- to turn the surround sound on or off, and press ENTER.

Select	То
ON	Listen to surround sound that is effective for stereo signals
SPACE	Listen to surround sound that is effective for monaural signals
OFF	Turn off surround sound

#### Reducing the noise of the picture

You can reduce the noise level of the picture when the TV receives a weak signal or when you play a videotape that is in poor condition.

- 1 Press MENU.
- 2 Press △+ or ∇- to select SET UP, and press

1	SET UP	
1	►WIDE:	OFF
1	AV OUT:	ROTINOM
	SURROUND:	
	VIDEO NR:	OFF

- 3 Press △+ or ∇- to select VIDEO NR, and press
- 4 Press △+ or ∇- to turn the noise reduction on or off, and press ENTER.

#### Adjusting the tilt of the picture

#### ■ KV-K295N21/K29CF1 only

You can adjust the tilt of the picture if it is not aligned to the TV screen. This happens when you set the TV in the direction with effect of the earth's magnetic fields.

- 1 Press MENU.
- 2 Press △+ or ∇- to select SET UP, and press

1	SET UP	
	►WIDE:	OFF
	AV OUT:	MONITOR
	SURROUND:	OFF
	VIDEO NR:	
	TILT CORR	ECTION: O

- 3 Press △+ or ∇- to select TILT CORRECTION, and press ENTER.
- 4 Press △+ or ∇- to select the most suitable value to align the picture position.

TILT CORRECTION : -3 
$$\leftarrow$$
 -2  $\leftarrow$  -1  $\leftarrow$  0  $\rightarrow$  +1  $\rightarrow$  +2  $\rightarrow$  +3  $\nabla$ -  $\Delta$ +

# 1-11. TROUBLESHOOTING

If you have any problem, read this manual again and check the countermeasures for each symptom listed

If the problem persists, contact your nearest authorized service center or dealer.

#### Snowy picture Noisy sound





- Check the antenna.
- → Check the antenna connection on the TV and on the wall.
- → Check the TV system setting.

#### **Dotted lines or stripes**



→ This may be caused by local interference (e.g. cars, neon signs, hair dryers, etc.). Adjust the antenna for minimum interference.

#### Double images or "ghosts"



→ This may be caused by reflections from nearby mountains or buildings. A highly directional antenna may improve the picture.

#### Good picture Noisy sound





→ Check the TV SYSTEM setting.

#### No picture No sound





- → Press MAIN POWER.
- → Press POWER.
- → Check the antenna connection.
- → Check the VCR connections.

#### Good picture No sound





- → Press VOLUME +.
- → Press MUTING.
- → Press A/B/ENLARGE.

#### No color

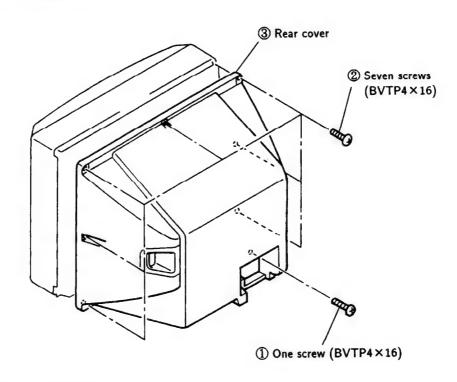


- → Adjust the COLOR level in the VIDEO CONTROL menu's ADJUSTMENT option.
- → Check the COLOR SYSTEM setting.

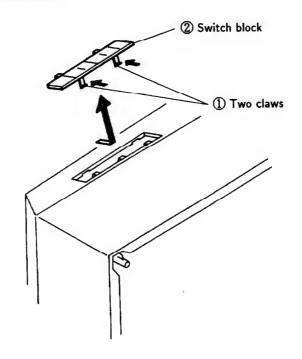
10-

# SECTION 2 DISASSEMBLY

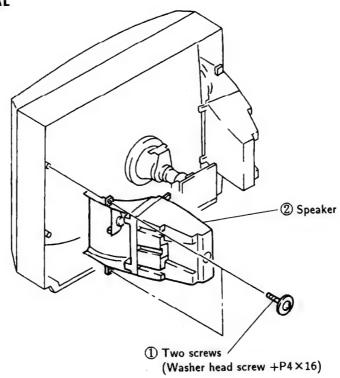
## 2-1. REAR COVER REMOVAL



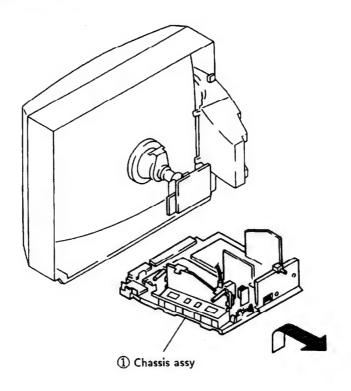
## 2-2. SWITCH BLOCK REMOVAL



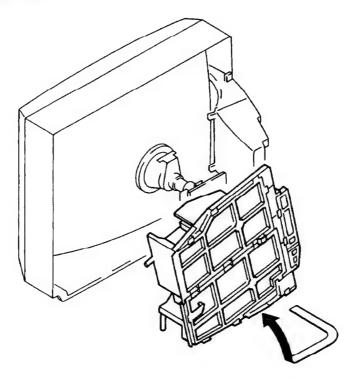
## 2-3. SPEAKER REMOVAL



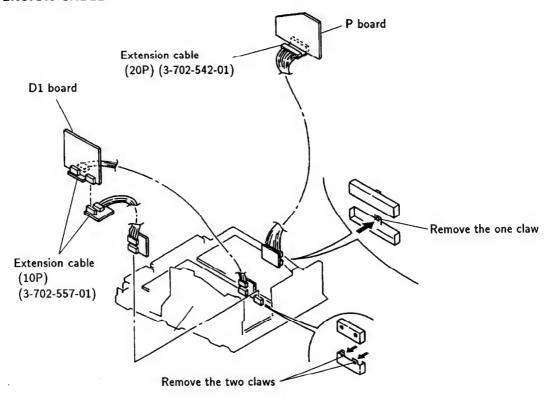
## 2-4. CHASSIS ASSY REMOVAL



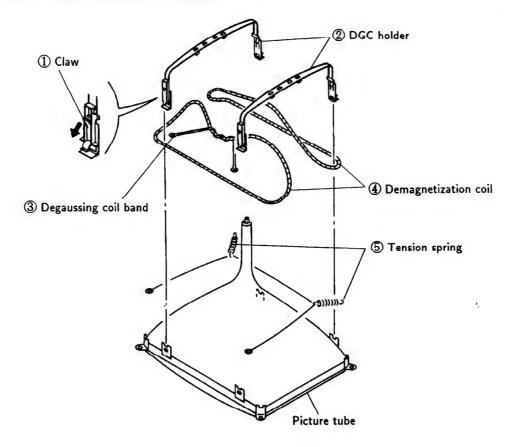
## 2-5. SERVICE POSITION



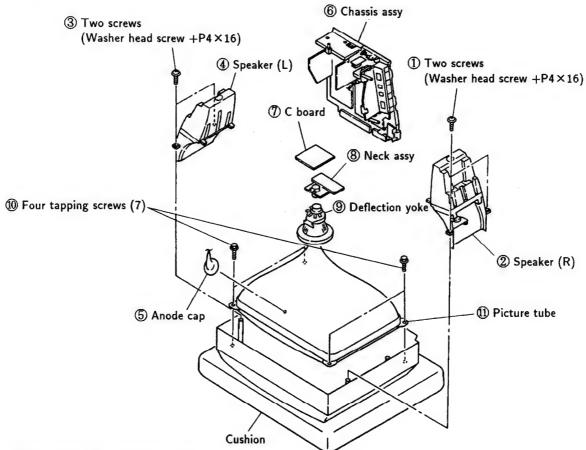
## 2-6. EXTENSION CABLE



## 2-7. DEMAGNETIZATION COIL REMOVAL



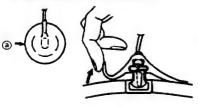
#### 2-8. PICTURE TUBE REMOVAL

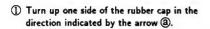


#### · REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

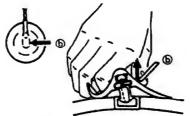
#### REMOVING PROCEDURES







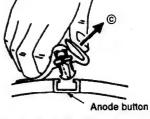
- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps! A material fitting called as shatter-hook terminal is built in the rubber.
- 3 Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.

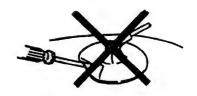


② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⑤.



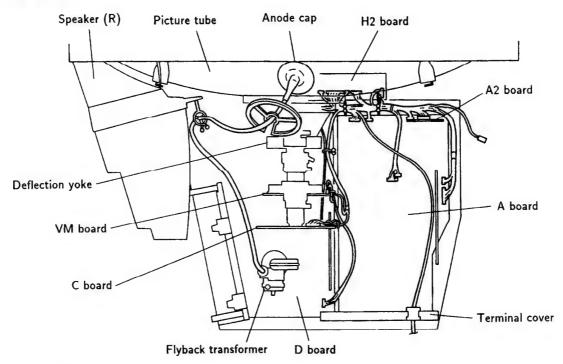
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⑥.



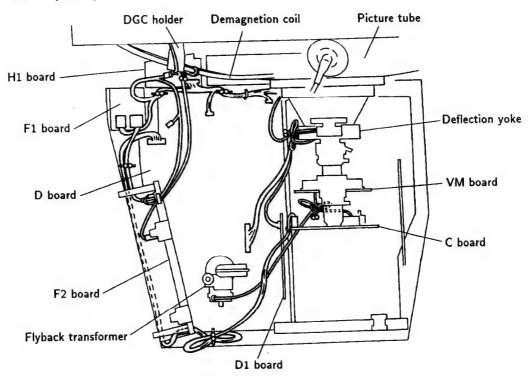


## 2-9. HARNESS LOCATION

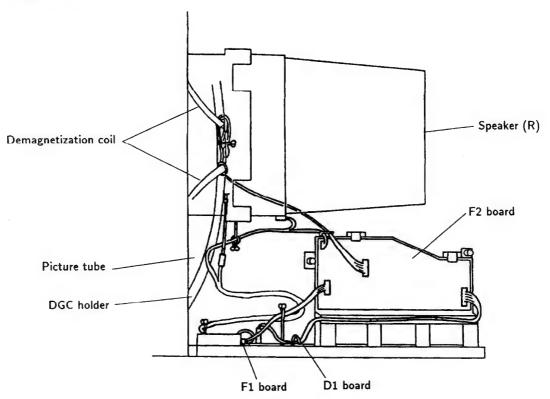
# (1) TOP VIEW

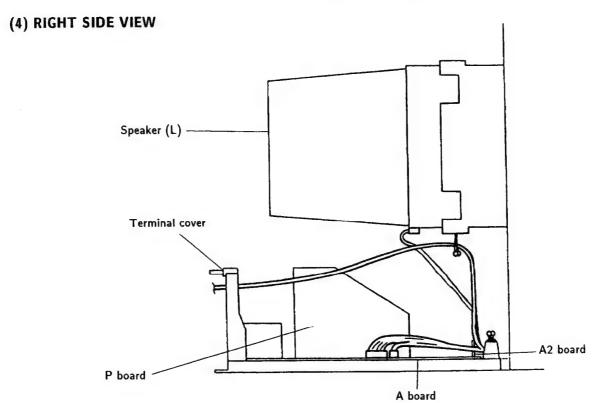


# (2) TOP VIEW (LEFT)



# (3) LEFT SIDE VIEW





# SECTION 3 SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Controls and switch should be set as follows unless otherwise noted:

PICTURE control . . . . . . . . . . . . RESET BRIGHTNESS control . . . . . . . . . center

Perform the adjustments in order as follows:

- 1. Beam Landing
- 2. Convergence
- 3. Focus
- 4. White Balance

Note: Test Equipment Required.

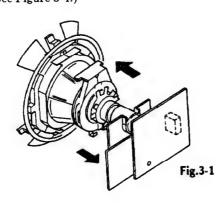
- 1. Color-bar/Pattern Generator
- 2. Degausser
- 3. Oscilloscope

#### Preparations:

- In order to reduce the influence of geomagnetism on the set's picture tube face it east or west.
- Switch on the set's power and degauss with the degausser.

#### 3-1. BEAM LANDING

- Input the white signal with the pattern generator.
   Contrast Rightness normal
  - Bightness | normal
    Position neck ass'y as shown in Fig 3-2.
- 3. Set the pattern generator raster signal to red.
- 4. Move the deflection yoke to the rear and adjust with the purity control so that the red is at the center and the blue and the green take up equally sized areas on each side.
  - (See Figures 3-1 through 3-3.)
- 5. Move the deflection yoke forward and adjust so that entire screen is red. (See Figure 3-1.)
- 6. Switch the raster signal to blue, then to green and verify the condition.
- When the position of the deflection yoke has been decided, fasten the deflection yoke with the screws.
- 8. If the beam does not land correctly in all the corners, use a magnet to adjust it.
  (See Figure 3-4.)



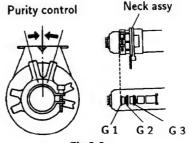


Fig.3-2

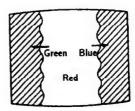
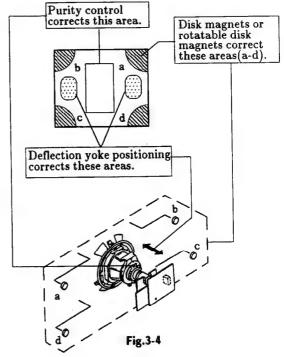


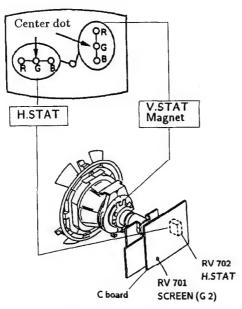
Fig.3-3



#### 3-2. CONVERGENCE

#### Preparation:

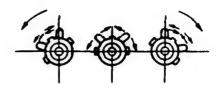
- Before starting this adjustment, adjust the focus, horizontal size, and vertical size.
- Minimize the brightness setting.
- Provide dot pattern.
- (1) Horizontal and Vertical Static Convergence



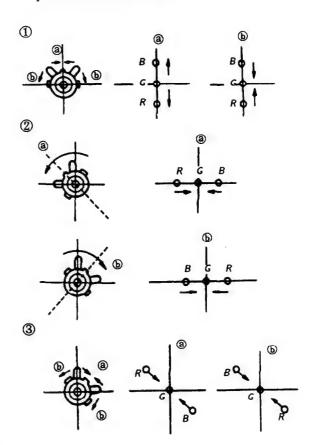
- 1. (Moving horizontally), adjust the H.STAT control so that the red, green, and blue points are on top of each other at the center of the screen.
- (Moving vertically), adjust the V.STAT magnet so that the red, green, and blue points are on top of each other at the center of the screen.
- 3. If the H.STAT variable resistor cannot bring the red, green, and blue points together at the center of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V. STAT magnet in the manner given below.

(In this case, the H.STAT variable resistor and the V.STAT magnet influence each other)

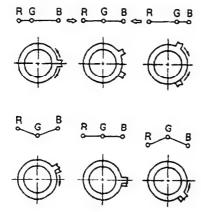
 Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the red, green, and blue points move as shown below.



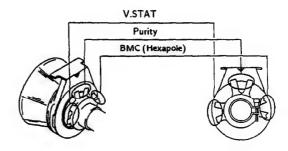
• Operation of BMC (Hexapole) Magnet



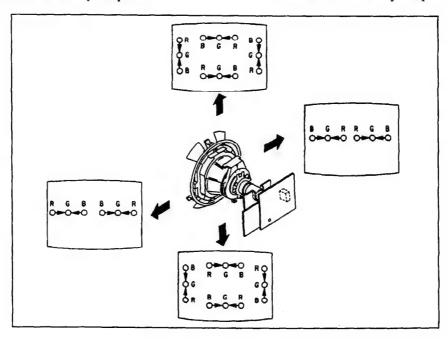
 The respective dot positions resulting from moving each magnet interact, so be sure to perform adjustment while tracking.
 Use the H.STAT VR to adjust the red, green, and blue dots so they coincide at the center of screen (by moving the dots in the horizontal direction).

# (2) Dynamic Convergence Adjustment Preparations:

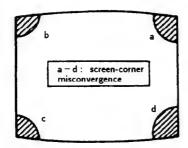
- Before starting this adjustment, adjust the horizontal static convergence and the vertical static convergence.
- 1. Slightly loosen the deflection yoke screws.
- 2. Remove the deflection yoke spacer.

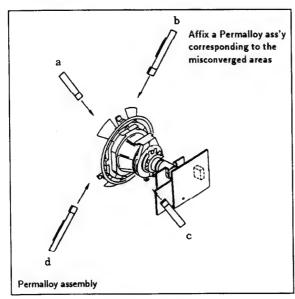


- · Y separation axis correction magnet adjustment
- Receive the cross-hatch signal, and adjust [PIX] to "MIN" and [BRT] to "standard".
- 2. Adjust the deflection yoke to the upright condition when it hits the CRT.
- 3. Adjust so that the Y separation axis correction magnet on the neck assembly is symmetrical at the top and bottom (open state).
- 4. Return the deflection yoke to its original position.
- Move the deflection yoke as shown in the figure below and optimize the convergence.
- 4. Tighten the deflection yoke screws.
- 5. Install the defelection yoke spacer.



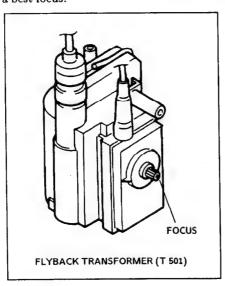
#### (3) Screen-corner Convergence





#### 3-3. FOCUS ADJUSTMENT

Adjust FOCUS control on the flyback transformer for a best focus.



#### a. AN ITEM OF ADJUSTMENT

ltem	Adimetera	St	andard			
number	Adjustment	50 Hz		60 H	z	Note
number	item	Normal	Wide	Normal	Wide	
07	GDR	1F	1F	1F	1F	G Drive
08	BDR	1F	1F	1F	1F	B Drive
09	GCT	07	07	07	07	G CUT-OFF
0A	BCT	07	07	07	07	B CUT-OFF
05	SBR	1F	1F	1F	1F	SUB-
						BRIGHTNESS

# ${\bf b}\,$ . METHOD OF CANCELLATION FROM SERVICE MODE

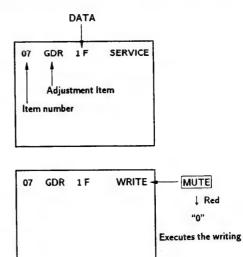
Set the standby condition (Press POWER button on the commander) in the next place, press POWER button again, hereupon it becomes TV mode.

#### c. METHOD OF WRITE FOR MEMORY

- 1) Set to Service Mode.
- 2) Press 1 (UP) and 4 (DOWN), select an item of adjustments.
- 3) Press MUTE button indicate WRITE (RED) on screen.
- 4)Press 0 button to write for memory.

#### d. MEMORY WRITE CONFIRMATION METHOD

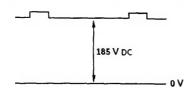
- 1) After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
- 2) Turn the power switch ON and set to Service Mode.
- Call the adjusted items again, confirm they were adjusted.



# 3-4. G2 (SCREEN) AND WHITE BALANCE ADJUSTMENTS

#### 1. G 2 (SCREEN) ADJUSTMENT(RV 701)

- 1) Set the PICTURE and BRIGHTNESS to normal.
- 2) Put to VIDEO input mode without signals.
- 3) Set to Service Mode.
- 4) Change BLU data of the item number "57" from "01" to "00". (To turn off Blue Black.)
- 5) Press MUTE, and 0 to write the data in the memory.
- 6) Connect R, G, and B of the C board cathode to the oscilloscope.
- 7) Adjust G2 (RV701) volume to the value below.



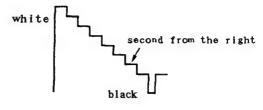
- 8) Re-set BLU data of the item number "57" from "00" back to "01".
- 9) Press MUTE, and 0 to write the data in the memory.

#### 2. WHITE BALANCE ADJUSTMENTS

- 1) Set to service mode.
- 2) Input an entire white signal.
- 3) Set the PICTURE to minimum.
- 4) Select SBR with 1 and 4, and then set the level to minimum with 3 and 6
- 5) Select GCT and BCT with 1 and 4.
  And adjust the level with 3 and 6 for the best white balance.
- 6) Set the PICTURE to maximum.
- 7) Select GDR and BDR with 1 and 4 and adjust the level with 3 and 6 for the best white balance.
- 8) Write into the memory by pressing MUTE → then 0.

#### 3. SUB BRIGHT ADJUSTMENT

- 1) Set to service mode.
- 2) Input a staircase signal of black and white from the pattern generator.
- 3) BRIGHTNESS ··· RESET PICTURE ······· minimum
- 4) Select SBR with I and 4, and adjust SBR level with 3 and 6 so that the stripe second from the right is dimly lit.



# SECTION 4 SELF DIAGNOSIS FUNCTION

If no acknowledgement is returned from a device which is turned "ON", the device has a problem. In this case, one of the LED's responding to the problem device will flicker defined number of times.

Flickering is operated by lighting the LED's for 60ms and turning them off for 600ms.

The flickering frequency responding to each failed device is shown below.

Device	NONVOLATILE MEMORY	AV SWITCH (CXA1545S)	MAIN Y/C (TDA9145)	RGB JUNGLE (CXA1587)	DY DSP (CXD2018)	SURROUND PROCESSOR (TA8776N)
Flickering Frequency	1	2	3	4	5	6

All the devices are checked one after another from the left on the table.

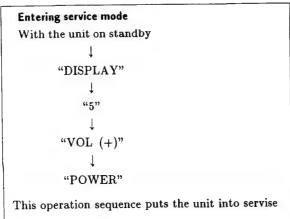
If an error is found, the responding LED will start flickering.

So, if more than 2 devices are failed, the one on the left side will start flickering at first.

# **SECTION 5 CIRCUIT ADJUSTMENTS**

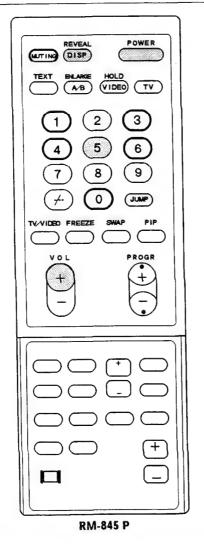
# 5-1. ADJUSTMENTS WITH COMMANDER

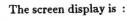
Servise adjustments are made with the RM-845 that comes with this unit.

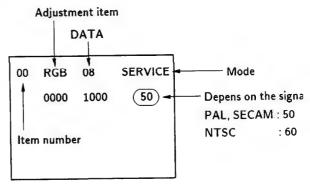


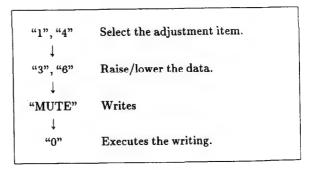
mode.

"1", "4" "3", "6" "MUTE" "0"	Raise/lower the service item number Raise/lower the data Writes Executes the writing
	DATE OF THE WILLIAM OF THE PROPERTY OF THE PRO
"7", "0"	The data all becomes the values in memory
"8", "0"	User control all goes to the standard
	state
"5", "0"	Service data initialization (Besure not to use usually.)
"2", "0"	Write 50Hz adjustment data to 60Hz,
2,0	or in opposition. (Be sure not to use
	usually.)







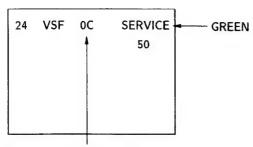


#### 5-2. ADJUSTMENT METHOD

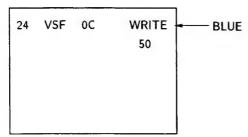
Item Number 24

This explanation uses V-SHFT as an example.

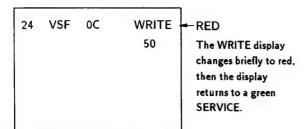
- 1. Select 24 V-SHFT with the "1" and "4" buttons.
- 2. Raise/lower the data with the "3" and "6" buttons.
- Select the optimum state. (The standard is for 0F PAL reception.)
- 4. Write with the MUTE button. (The display changes to blue WRITE.)
- 5. Execute the writing with the "0" button. (The WRITE display changes briefly to red.)



Adjusted with "3" and "6" buttons



Written with "MUTE"



Write excuted with "0"

Use the same method for Items Number 00-5E. Use "1" and "4" to select the adjustment item, use "3" and "6" to adjust, write with "MUTE", then execute the write with "0".

Note: In "WRITE", the data of all items are wrote together to memory.

- H-FRE can be adjusted automatically. Feed a standard signal and input "9", the automatic adjustment is executed.
- As for V-FREQ, by searching the bolded screen V range with adjusting data.

Note: In item 02 50Hz, or item 03 60Hz, it operates normally in spite of the 50Hz or the 60Hz of the input signal. Therefore be sure to adjust data according to the input signal.

ltem	Adjustment			Standar				
number	ltem	Data range	Normal	Hz Wide	Normal	Hz Wide	Note	(Device)
00	RGB	00~0F	07	07	07	07	RGB PICTURE	(CXA 1587 S)
01	SCN	00~0F	08	06	08	06	SUB-Contrast	(CXA 1587 S)
02	VM	00~03	01	01	01	01	VM Level	(CXA 1587 S)
03	SCL	00~0F	08	07	08	07	SUB-COLOR	(CXA 1587 S)
04	SHU	00~0F	08	08	08	08	SUB-HUE	(CXA 1587 S)
05	SBR	00~3F	1F	1F	1F	1F	SUB-BRIGHTNESS	(CXA 1587 S)
06	ABL	00~03	03	03	02	02	ABL Mode	(CXA 1587 S)
07	GDR	00~3F	1F	1F	1F	1F	G Drive	(CXA 1587 S)
80	BDR	00~3F	1F	1F	1F	1F	B Drive	(CXA 1587 S)
09	GCT	00~0F	07	07	07	07	G CUT-OFF	(CXA 1587 S)
0A	BCT	00~0F	07	07	07	07	B CUT-OFF	(CXA 1587 S)
0B	AKR	00~FF	7F	7F	7F	7F	AKB OFF R CUT-OFF	(CXA 1587 S)
0C	AKG	00∼FF	7F	7F	7F	7F	AKB OFF G CUT-OFF	(CXA 1587 S)
0D	AKB	00∼FF	7F	7F	7F	7F	AKB OFF B CUT-OFF	(CXA 1587 S)
0E	GMA	00~0F	OC	0C	0C	0C	$\gamma$ control	(CXA 1587 S)
0F	DCT	00~03	00	00	00	00	DC TRAN	(CXA 1587 S)
10	DPI	00~03	03	03	03	03	D-PIC	(CXA 1587 S)
11	YFI	00~3F	22	22	22	22	Y Filter Adjust	(CXA 1587 S)
12	SHL	00~01	01	01	01	01	SHP-LIM	(CXA 1587 S)
13	YDL	00~0F	07	07	07	07	Y Delay Time	(CXA 1587 S)
14	YSW	00~03	01	01	01	01	Y-SW OUT	(CXA 1587 S)
15	HSH	00∼3F	24	24	28	28	H Shift	(CXA 1587 S)
16	POV	00~0F	08	08	08	08	Pre-Over	(CXA 1587 S)
17	SHF	00~03	02	02	02	02	SHP-F 0	(CXA 1587 S)
18	SSH	00~03	01	01	02	02	SUB-Sharpness	(CXA 1587 S)
19	RMT	00~01	00	00	00	00	R-Mute	(CXA 1587 S)
1A	GMT	00~01	00	00	00	00	G-Mute	(CXA 1587 S)
1B	BMT	00~01	00	00	00	00	B-Mute	(CXA 1587 S)
1C	AG 1	00~01	00	00	00	00	Aging 1 (White)	(CXA 1587 S)
1D	AKF	00~01	00	00	00	00	AKB-OFF	(CXA 1587 S)
1E 1F	SMD	00~01 00~01	00	00	00	00	Scan Mode	(CXA 1587 S)
20	VEX AFC	00~01	03	03	03	03	V-Extension	(CXA 1587 S)
21	AFF	00~01	00	00	00	00	AFC Loop Gain AFC-OFF	(CXA 1587 S) (CXA 1587 S)
22	RFP	00~01	00	00	00	00	Reference Position	(CXA 1587 S)
23	VSZ	00~3F	1E	1E	1A	1A	V-Size	(CXD 2018 Q)
24	VSF	00∼3F	2E	2E	32	32	V-Shift	(CXD 2018 Q)
25	SCR	00∼F	08	80	08	08	S-Correction	(CXD 2018 Q)
26	VLN	00∼F	08	80	08	08	V-Linearity	(CXD 2018 Q)
27	HSZ	00∼3F	OC.	0C	0 E	0 E	H-Size	(CXD 2018 Q)
28	PAP	00∼3F	2E	2E	2E	2E	Pin-Amp	(CXD 2018 Q)
29	TLT	00~0F	09	09	09	09	Tilt	(CXD 2018 Q)
2A	UCP	00~0F	0A	0A	0A	0A	Upper Corner Pin	(CXD 2018 Q)
2B	LCP	00~0F	OC	0C	0C	OC.	Lower Corner Pin	(CXD 2018 Q)
2C	VBW	00~0F	08	08	08	08	V-Bow	(CXD 2018 Q)
2D	VAG	00~0F	08	08	08	08	V-Angle	(CXD 2018 Q)
2E 2F	HVV	00~07 00~07	04	04 00	07	07	HV-Comp-V HV-Comp-H	(CXD 2018 Q) (CXD 2018 Q)
30	FCL	00~07	03	03	03	03	Frame Color	(SDA 9188)
31	FON	00~01	01	01	01	01	Frame ON	(SDA 9188)
32	DLY	00~07	00	00	00	00	Select Delay LL 3 P	(SDA 9188)
33	P-V	00~0F	07	07	07	07	V read delay	(SDA 9188)
34	PVS	00~07	04	04	04	04	PIP-V offset	(SDA 9188)
35	P-H	00∼3F	0A	0A	07	07	H read delay	(SDA 9188)
36	PHS	00~0F	07	07	03	03	PIP-H offset	(SDA 9188)
37	CTR	00~0 F	0A	0A	0A	0A	Contrast	(SDA 9188)
38	FWV	00~01	01	01	01	01	Frame Width V	(SDA 9188)
39	FWH	00~01	01	01	01	01	Frame Width H	(SDA 9188)
3A	DVI	00~0F	07	07	07	07	Setting Delay VSI	(SDA 9188)
3B	DVP	00~0 F	0F	0F	0F	0F	Delay VSP Pulse	(SDA 9188)
3C	BRT	00~0 F	0C	0C	0C	0C	Frame BRIGHT Data	(SDA 9188)

Item	A 1'			Standar	d DATA			
number	Adjustment Item	Data range	50	Hz	60	Hz	Note	(Device)
number	item		Normal	Wide	Normal	Wide		` ,
3D	LEV	00~0 F	00	00	00	00	Level Adjust	(TDA 9840)
3E	STR	00∼3 F	02	02	02	02	Stereo Adjust	(TDA 9840)
3F	AXG	00~01	00	00	00	00	AUX Output Gain	(TDA 8204)
40	AXM	00~01	00	00	00	00	AUX Output Mute	(TDA 8204)
41	VCX	00~01	00	00	00	00	VCXO free run	(TDA 8204)
42	ERC	00~01	00	00	00	00	Error count Time	(TDA 8204)
43	MXE	00~01	00	00	00	00	MAX. allowed Error	(TDA 8204)
44	SRO	00~01	00	00	00	00	SRO set Bit	(TDA 8204)
45	ATO	00~00	01	01	01	01	Auto Selection	(TDA 8204)
46	SYS	00~01	00	00	00	00	System select	(TDA 8204)
47	FSW	00~03	00	00	00	00	Force Switch	(TDA 8204)
48	SYN	00~01	01	01	01	01	Synthesizer	(TDA 8204)
49	VCR	00~01	00	00	00	00	VCC Reference Sw	(CXP 1315 P)
4A	SEL	00∼FF	5F	5F	5 F	5F	Separation Level	(CXP 1315 P)
4B	DCS	00∼3F						
4C	UYB	00~3F						
4D	LYB	00~3F						
4E	HAP	00~3F						
4F	HTL	00~3F						
50	UCB	00~3F						
51	UTL	00∼3F						
52	LCB	00∼3F						
53	LTL	00~3F						
54	ТХР	00~0 F	05	05	05	05	Teletext Picture	(Teletext μ-Con)
55	ODL	00~FF	10	10	10	10	Power ON Delay	(CXP 80424)
56	OSH	00∼3 F	0F	0F	0F	0F	OSD Position H	(CXP 80424)
57	BLU	00~01	01	01	01	01	Blue Back Feature	(CXP 80424)
58	ROC	00~0F	04	07	07	07	Center of Rotation	(CXP 80424)
59	ROS	00~07	07	03	03	03	Step Width	(CXP 80424)
5A	HTR	00∼3 F	1 F	1 F	1F	1 F	H Trapezoid	(CXP 80424)
5B	MUT	00~01	01	01	01	01	No Sync. Mute	(CXP 80424)
5C	DID	00~01	00	00	00	00	Disable Degauss	(CXP 80424)
5D	OP0	00~FF	*1	*1	*1	*1	Option 0	(CXP 80424)
5E	OP1	00~0F	*2	*2	*2	*2	Option 1	(CXP 80424)

### \*1 Input data are different according to models.

ltem	CCD	Text	PinP	Jpn	NICM	W. G	мтѕ	Comb
KV-K29CF1	0	0	1	0	0	0	0	1

### \*2 Input data are different according to models.

İtem	-	-	-	-	Mono	Tilt	Dcon	Chin
KV-K29CF1	0	0	0	0	0	1	0	1

#### 5-3. DISPLAY POSITION ADJUSTMENT

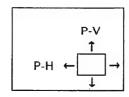
Item Numbers 33-36

33 P-V Pin-P vertical position correction

34 PVS Pin-P vertical offset

35 P-H Pin-P horizontal position correction

36 PHS horizontal offset



 When pressing PIP "POSITION" key in the service mode, "POSITION" turns round and round automatically.

Item Numbers 33-36 are set to the standard values.

54 TXP Teletext picture

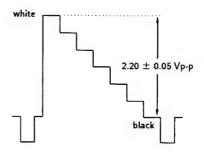
Corrects the brightness for when teletext is received.

Standard value is 05.

#### 5-4. A BOARD ADJUSTMENT

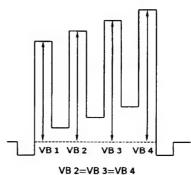
#### SUB CONTRAST ADJUSTMENT (SCN)

- 1. Receive a PAL color-bar 10 ith 100 IRS.
- Put DC 4.0 V to the pin (ABL IN) of IC 304, A board. Set the PICTURE 100%, BRIGHT 50% and COLOR MIN.
- 3. Connect an oscilloscope to the pin (6) (R OUT) of CN 118, A board.
- 4. Set to Service Mode and select 01 (SIN) with 1 and 4 of the commander to adjust to 2.2 ± 0.05 V.
- Press MUTING → 0 of the commander to write the data.
- 6. Receive a NTSC color-bar and adjust as step 4 and 5.
- 7. Receive the PAL color-bar to set to WIDE mode by pressing MENU Then set to Servise Mode and adjust 01 (SCN) to write the 2 step dropped value of the step 4.
- 8. Receive the NTSC color-bar and adjust as step 7.



### SUB COLOR ADJUSTMENT (SCL)

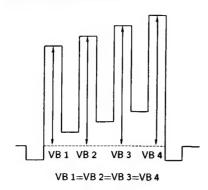
- 1. Receive a PAL color-bar.
- Connect an oscilloscope to the pin (B OUT) of CN118, A board. Set the PICTURE 100%, COLOR 38%, BRIGHT 50%.
- 3. Set to Service Mode and select 03 (SCL) with and 4 of the commander to adjust to VB2=VB3= VB4 with 3 and 6
- 4. Press MUTING → 0 of the commander to write the data.
- 5. Adjust as step 4 and 5 by receiving NTSC color bar.



- 6. Receive the PAL color-bar to set to WIDE mode by pressing MENU Then set to Servise Mode and adjust 03 (SCL) to write the 1 step dropped value of the step 4.
- 7. Receive the NTSC color-bar and adjust as step 7.

#### SUB HUE ADJUSTMENT (SHU)

- 1. Receive a NTSC color-bar.
- Connect an oscilloscope to the pin (B OUT) of CN 118, A board.
- 3. Select 04 (SHU) with 1 and 4 of the commander by setting to Service Mode and adjust to VB 1=VB 2 =VB 3=VB 4 with 3 and 6



- Press MUTING → 0 of the commander to write the data.
- 5. Set to WIDE Mode by MENU button to write the same value as the step 3.

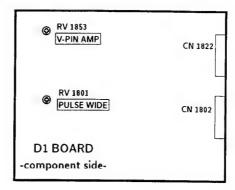
#### PIP H. V. POSITION (P-H, P-V)

- 1. Receive a PAL color-bar.
- 2. Set the PIP picture by pressing PIP button of the commander.
- 3. Set to Service Mode.
- 4. Select 33 (P-V) with the land 4 of the commander to set the data "07" with 3 and 6.
- 5. Select 35 (P-H) to set the data "0 A".
- 3. Receive a NTSC color-bar.
- 7. Select 33 (P-V) to set the data "07" with 3 and 6 Select 35 (P-H) to set the data "07" with 3 and 6
- 3. Check by pressing POSITION of the commander.
- Press MUTING → 0 of the commander to write the data.

#### Y. FILTER ADJUSTMENT (YF1)

- 1. Set to Service Mode.
- 2. Select 14 (Y. SW) with the land 4 of the commander to set the data "3" with 3 and 6.
- 3. Put SINE wave of 4.43 MHz to the pin ② (YIN) of IC304.
- 4. Connect an oscilloscope to the pin ① of CN105, A board.
- 5. Adjust so that the waveform is minimum by selecting 11 (YF1) with 3 and 6
- 6. Press MUTING → 0 of the commander to write the data.

#### 5-5. D1 BOARD ADJUSTMENT



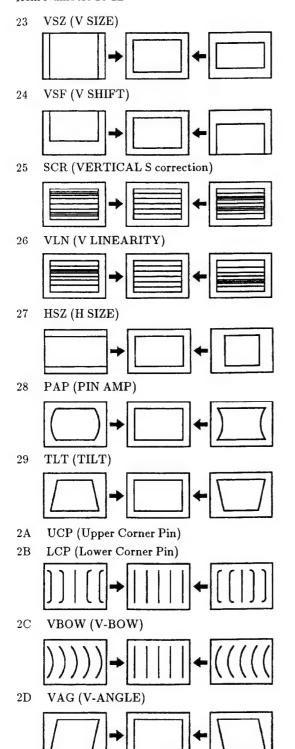
# V-PIN AMP, PULSE WIDTH ADJUSTMENT (RV 1853, RV 1801)

- 1. Receive a color-bar.
- 2. Connect AC voltmeter between the pin ① of CN 1802 and GND.
- Turn RV 1853 clockwise to the end and RV 1801 counterclockwise to the end.
- 4. Turn RV 1801 clockwise a little to adjust the value on the AC voltmeter to AC 25  $\pm$  0.5 Vp-p.

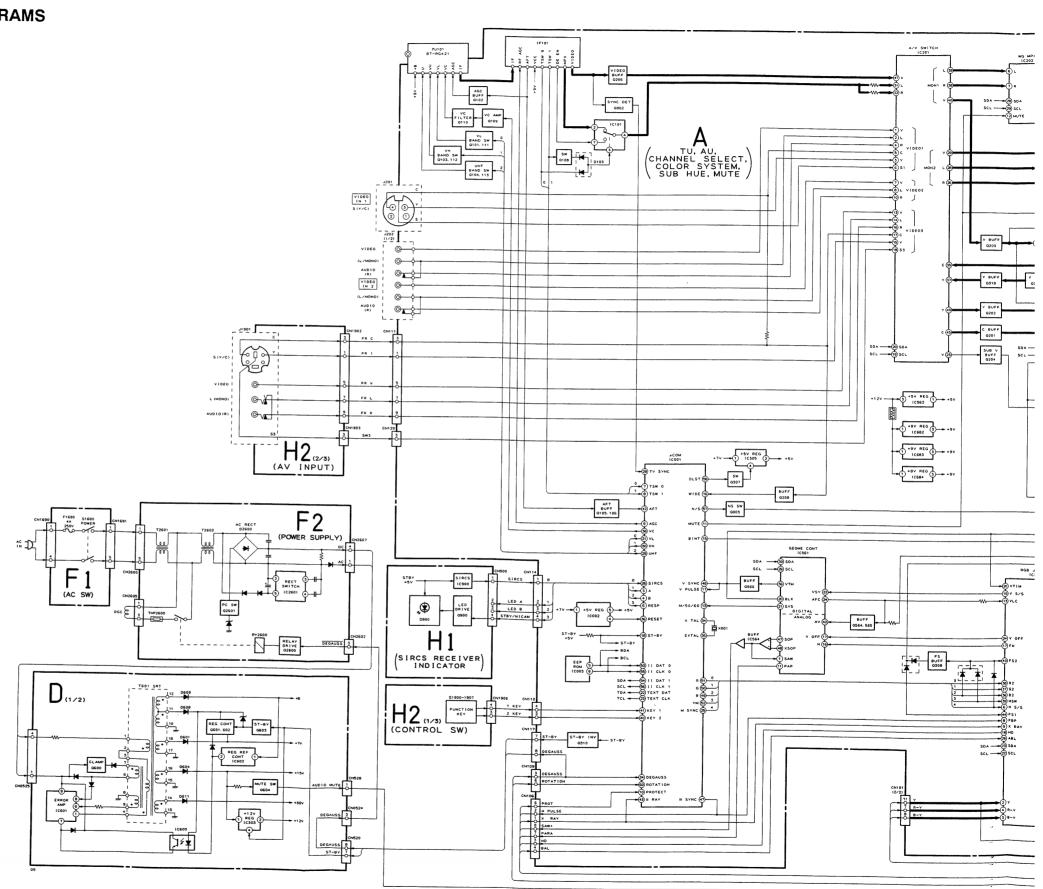
#### KV-K29CF1 RM-845P

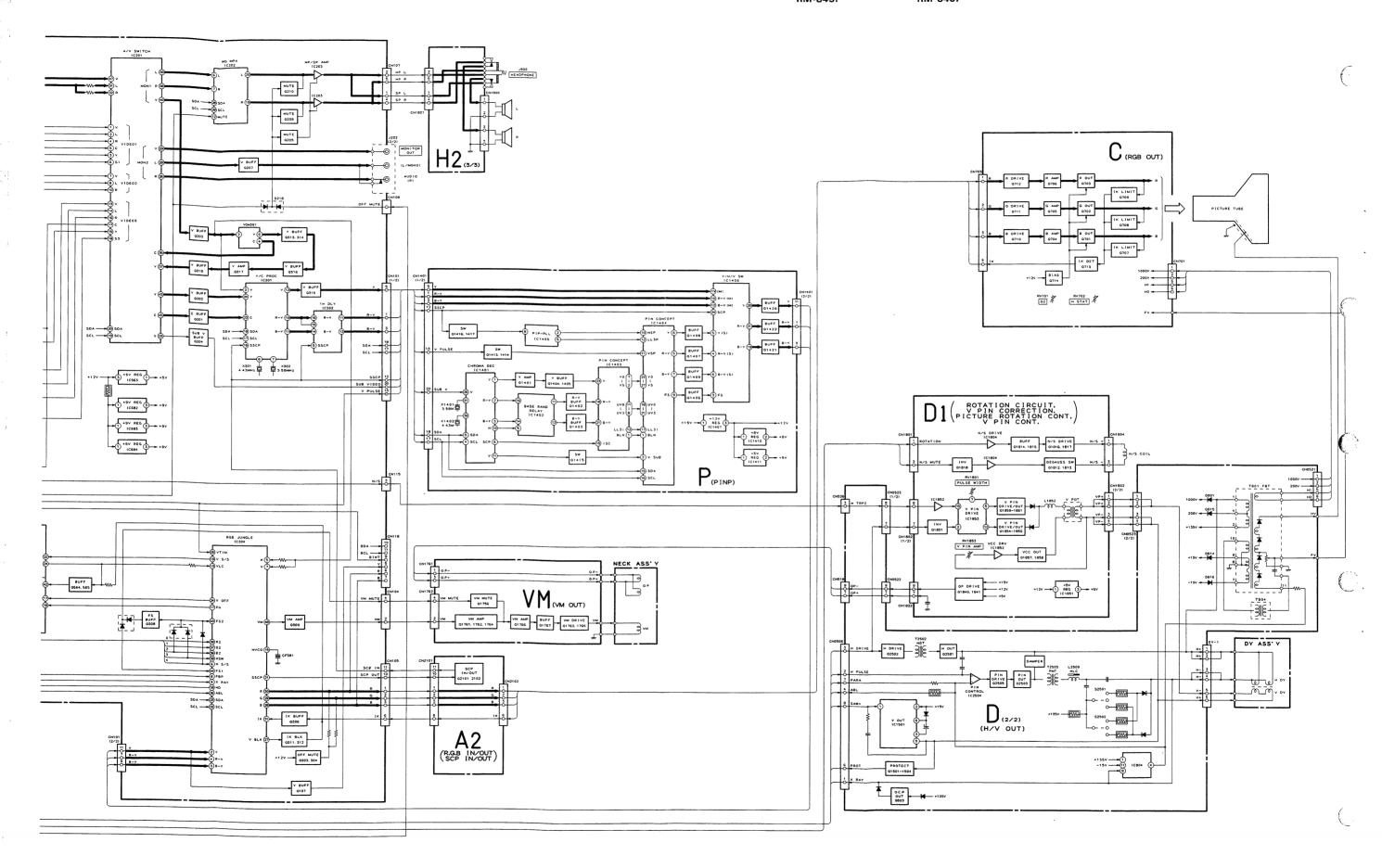
## 5-6. PICTURE DISTORTION ADJUSTMENT

Item Numbers 23-2D

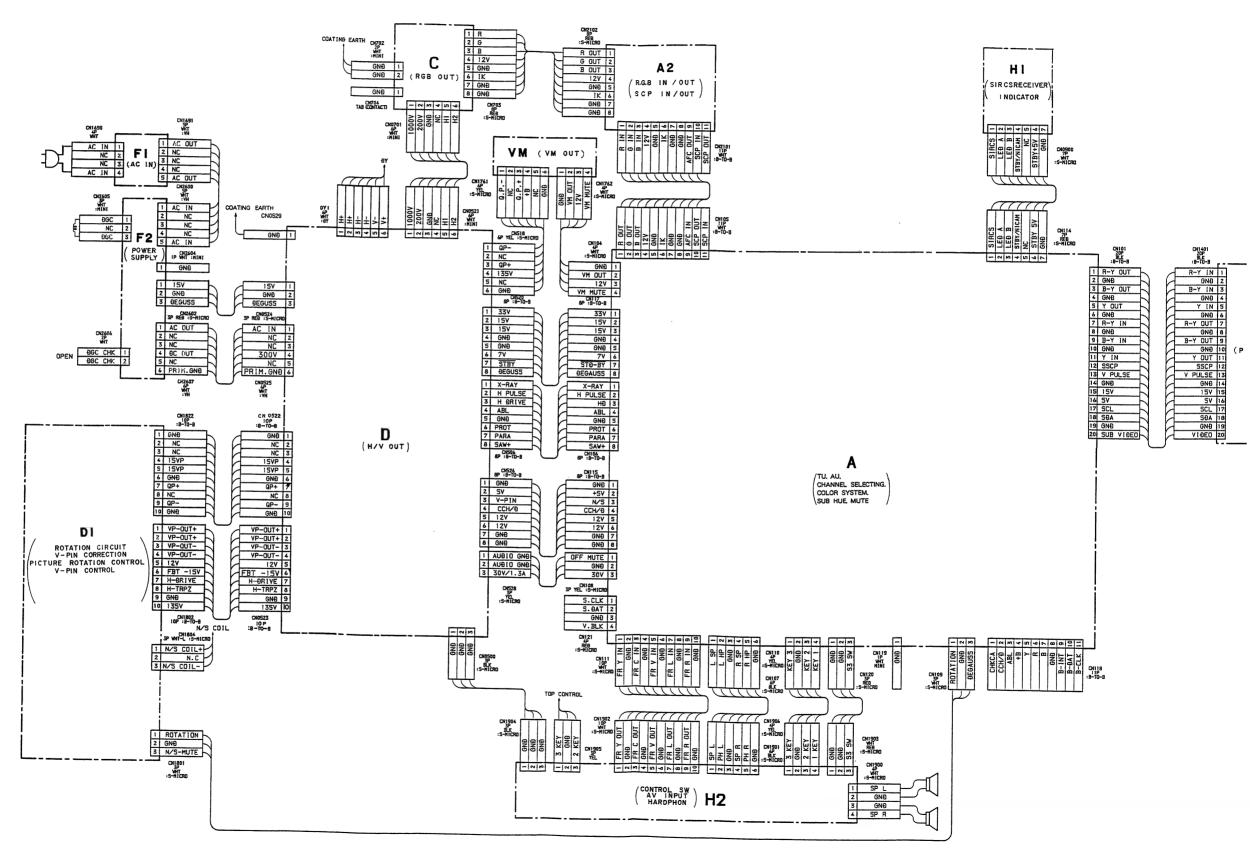


6-1. BLOCK DIAGRAM

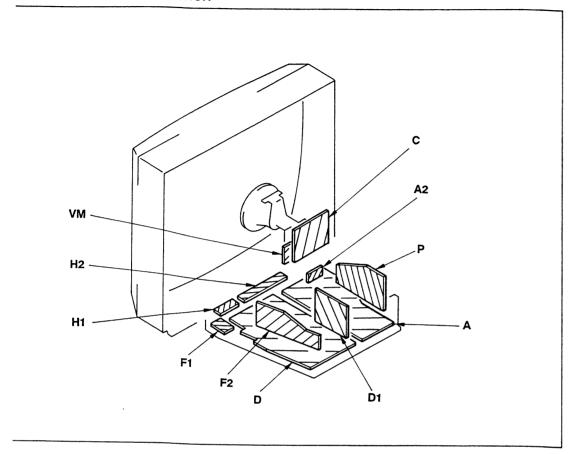




## 6-2. FRAME SCHEMATIC DIAGRAM



#### CIRCUIT BOARDS LOCATION



# 6-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

#### Note:

- All capacitors are in μF unless otherwise noted. pF: μμF
   50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.

 $k\Omega$  =1000  $\Omega$ ,  $M\Omega$  =1000  $K\Omega$ 

 Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm Rating electrical power ¼ W (CHIP: 1/10W)

- : nonflammable resistor.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve
   B. unless otherwise noted.
- · Readings are taken with a color-bar signal input.

no mark: PAL

( ): SECAM

( ): NTSC 3.58

( ): NTSC 4.43

- $\bullet$  Readings are taken with a 10  $\,M\,\Omega\,$  digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- \* : Can not be measured.
- Circled numbers are waveform reference.

B + bus.
B - bus.
signal path.

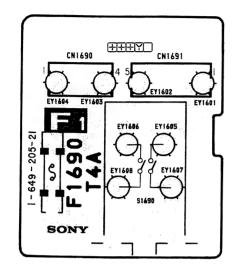
Note: The components identified by shading and mark  $\underline{\mathbb{A}}$  are critical for safety. Replace only with part number specified.

#### Reference information

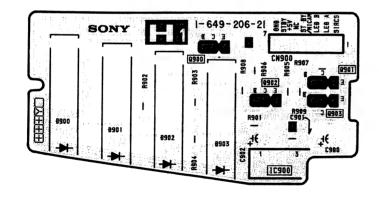
RESISTOR : RN METAL FILM : RC SOLID : FPRD NONFLAMMABLE CARBON : FUSE NONFLAMMABLE FUSIBLE : RS NONFLAMMABLE METAL OXIDE NONFLAMMABLE CEMENT NONFLAMMABLE WIREWOUND : RW ADJUSTMENT RESISTOR : ※ COIL : LF-8L MICRO INDUCTOR CAPACITOR : TA TANTALUM : PS STYROL : PP POLYPROPYLENE : PT MYLAR : MPS METALIZED POLYESTER METALIZED POLYPROPYLENE : MPP **BIPOLAR** HIGH TEMPERATURE : ALT HIGH RIPPLE : ALR

# KV-K29CF1 KV-K29CF1 RM-845P

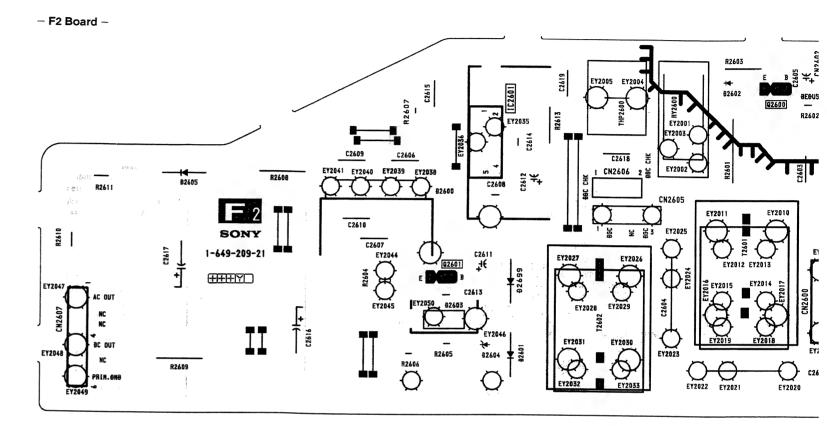
# PRINTED WIRING BOARDS - F1 Board -

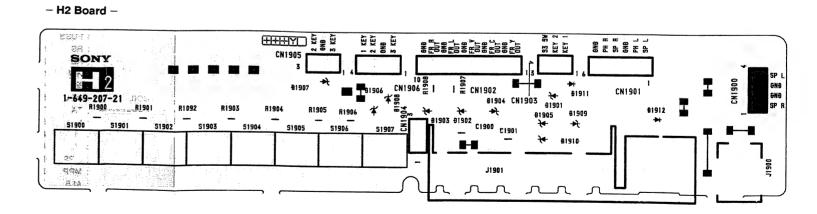


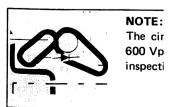
#### - H1 Board -



# F1 [AC IN] H1 [SIRCS RECEIVER, ] F2 [POWER SUPPLY] H2 [CONTROL SW, AV INPUT, HEADPHONE]





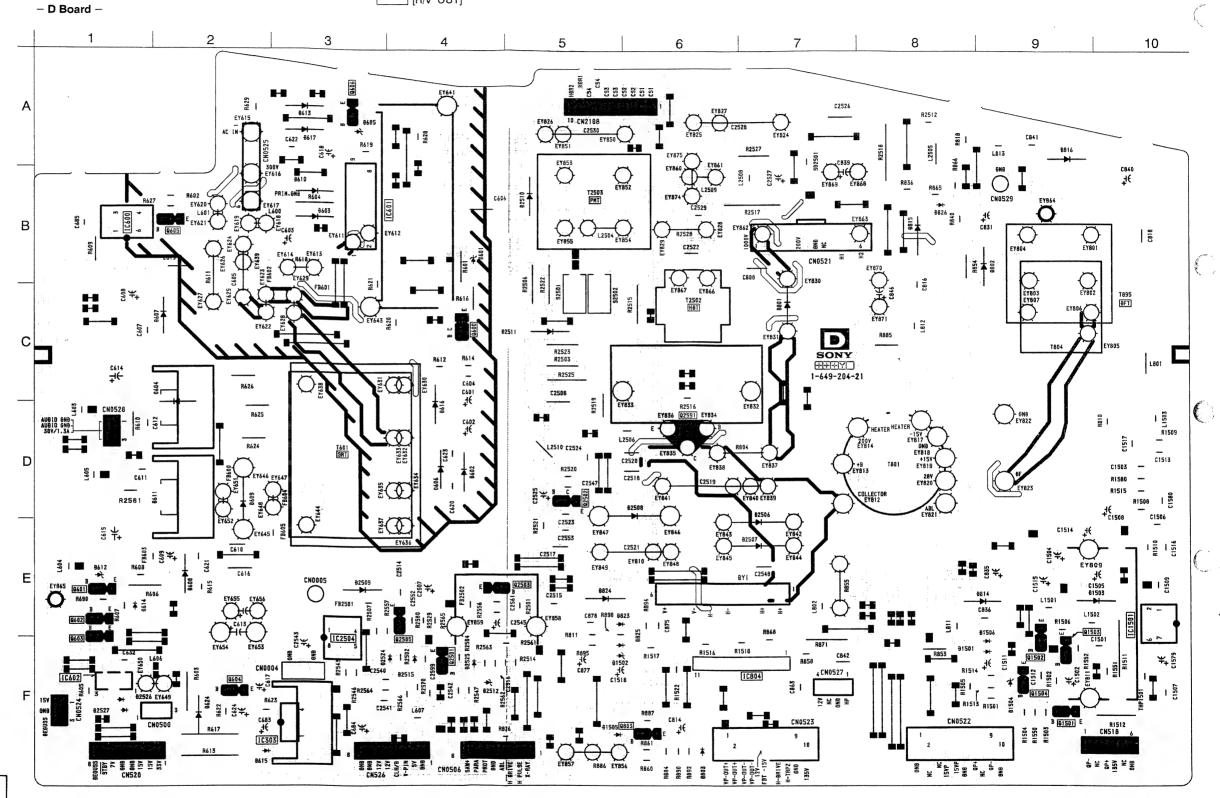


#### KV-K29CF1 RM-845P KV-K29CF1 RM-845P

D [H/V OUT]

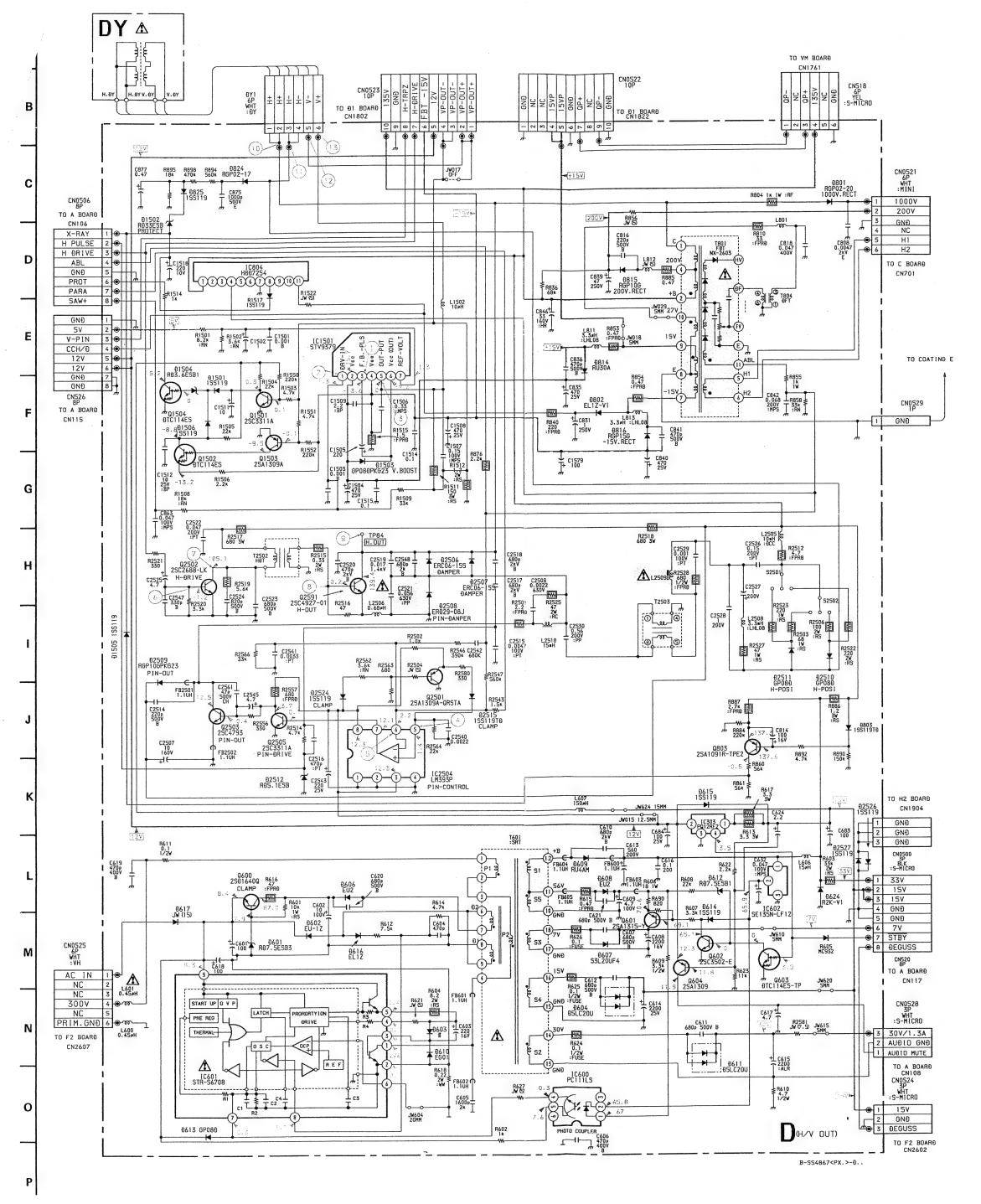
#### • D BOARD

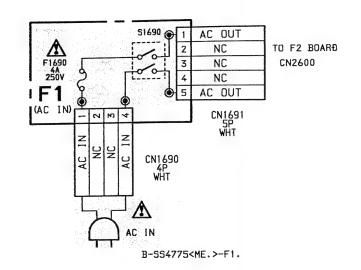
IC	DIODE
IC303 F - 3 IC600 B - 1 IC601 B - 3 IC602 F - 1 IC804 F - 7 IC1501 E - 10 IC2504 E - 3	D601 B-4 D602 D-4 D604 C-2 D606 D-4 D607 C-2 D608 E-2 D609 D-2 D610 B-3 D611 D-2 D612 E-1 D613 A-3 D614 E-1 D615 F-2 D616 D-4 D617 A-3 D624 F-2 D801 C-7
TRANSISTOR	D802 B-9 D803 F-6
Q600 C-4 Q601 E-1 Q602 E-1 Q603 E-1 Q604 F-3 Q803 F-6 Q1501 F-9 Q1502 E-9 Q1503 E-9 Q1504 F-9 Q2501 F-4 Q2502 D-5 Q2503 E-4 Q2505 E-4 Q2591 D-6	D814 E - 9 D815 B - 8 D816 A - 9 D824 E - 5 D825 E - 5 D1501 E - 9 D1502 F - 5 D1503 E - 10 D1504 F - 9 D1505 F - 5 D1506 E - 9 D2506 D - 7 D2507 E - 7 D2508 D - 6 D2509 E - 3 D2510 B - 5 D2511 C - 5 D2512 F - 4 D2512 F - 4 D2524 F - 3 D2526 F - 1 D2527 F - 1

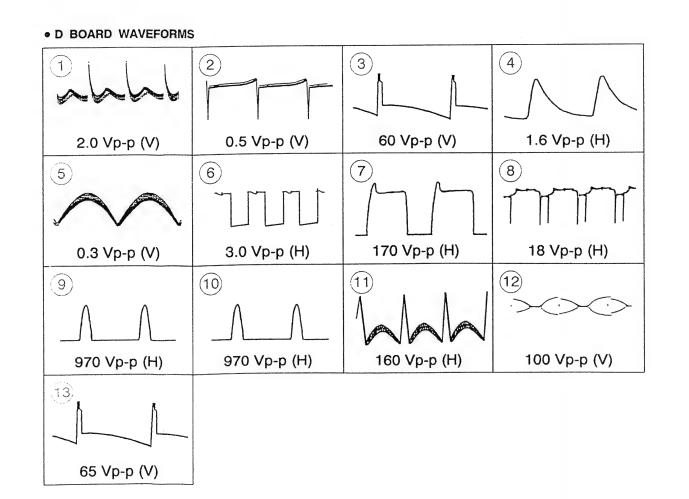


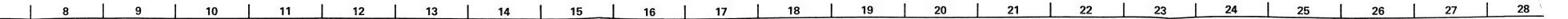
ed as left contains high voltage of over ust be paid to prevent an electric shock in ring.

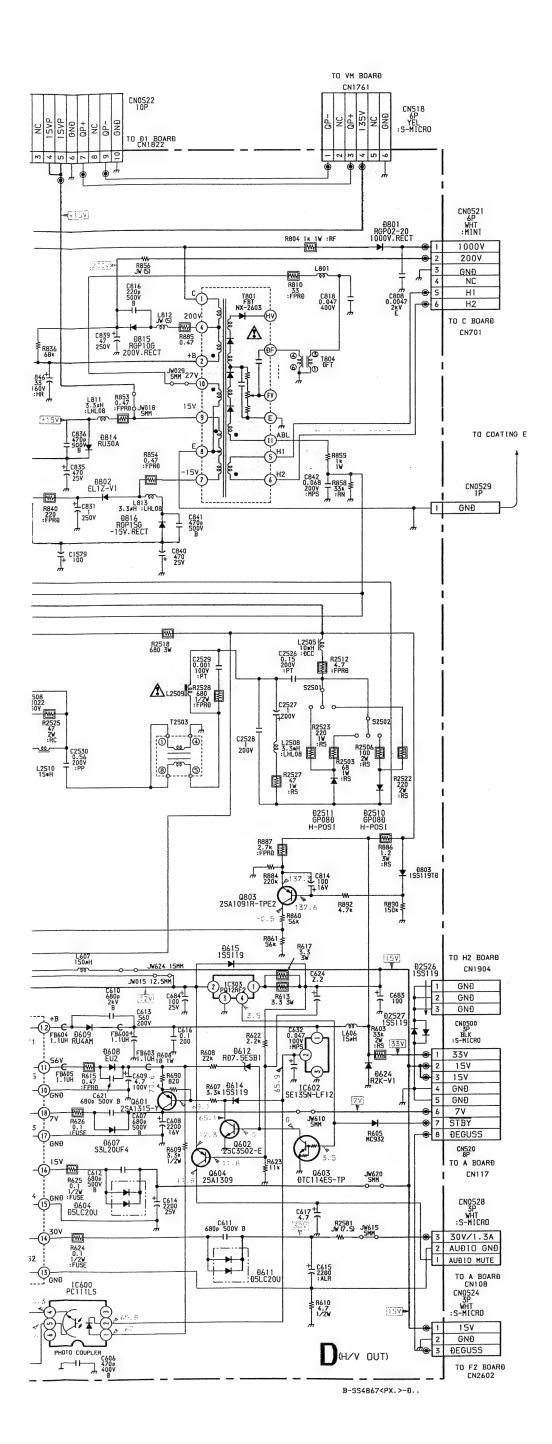


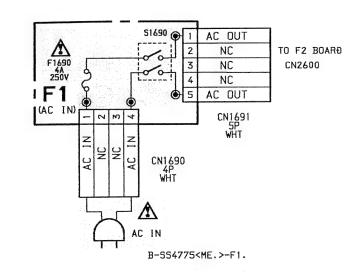


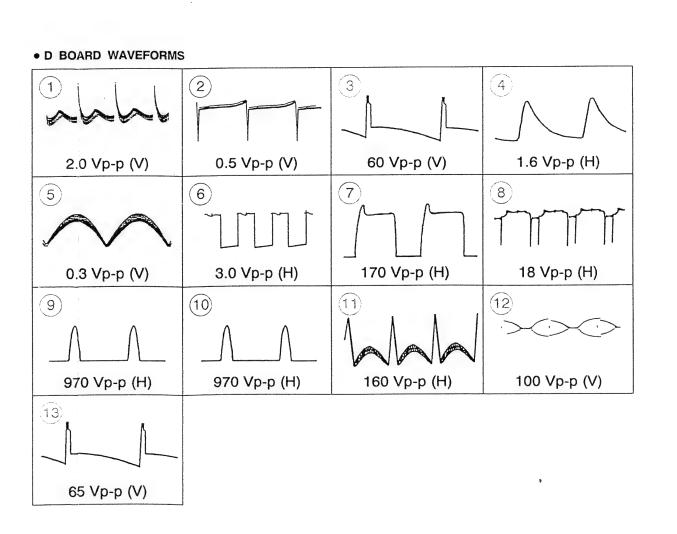


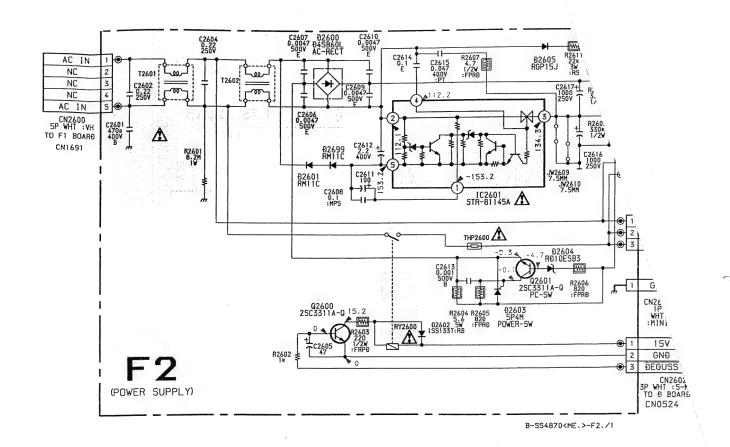


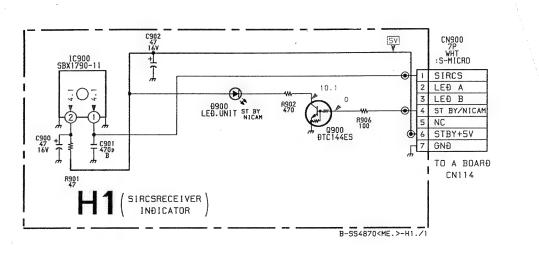


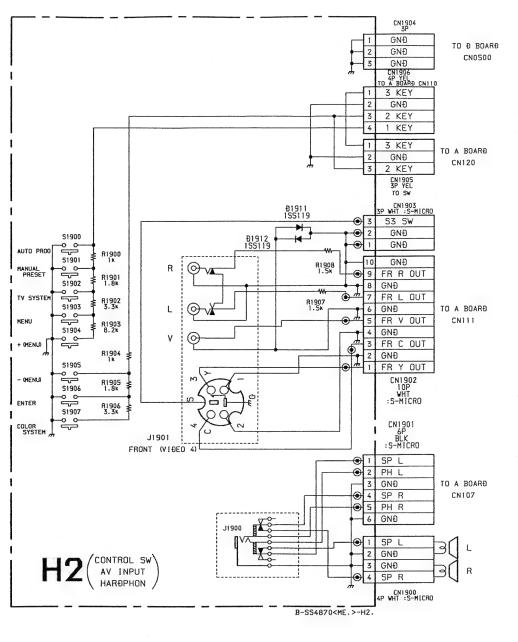


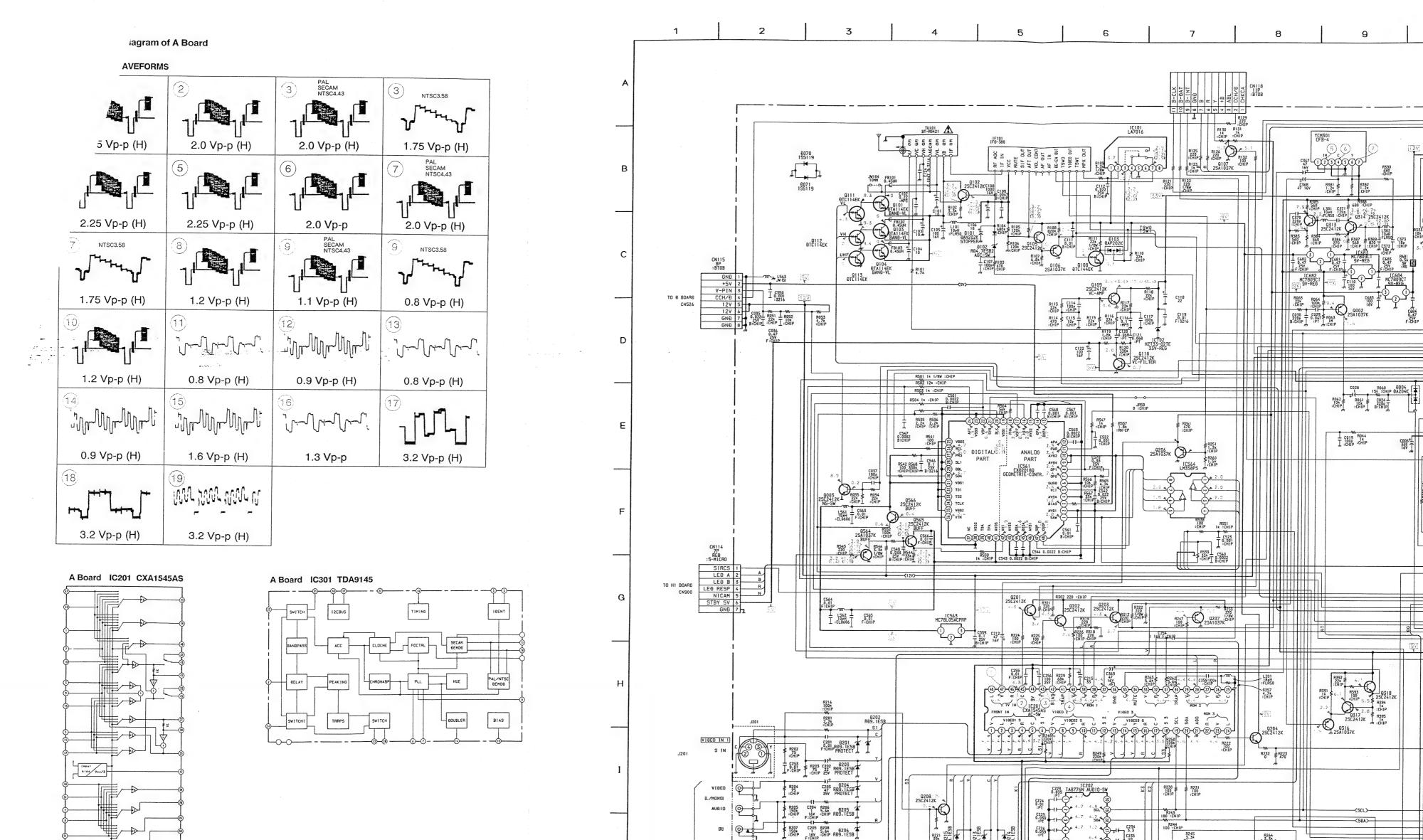












Schematic diagrams D F1 F2

← H1 H2 boards

Schematic diagram

-47-

A board →

R233 75 :CHIP

R23S S. 6k :CHIP C219 16V F:CHIP

8217 R09.1E5B \$ 5.68 CRIP C221 I lev F:CHIP

TO H2 BOARD CN1904

TO H2 BOARD CN1901

CN108 37 0 160 PV VEL S-HICRO OF BOARD CN0528

9

10

TO 0 BOARD CN520

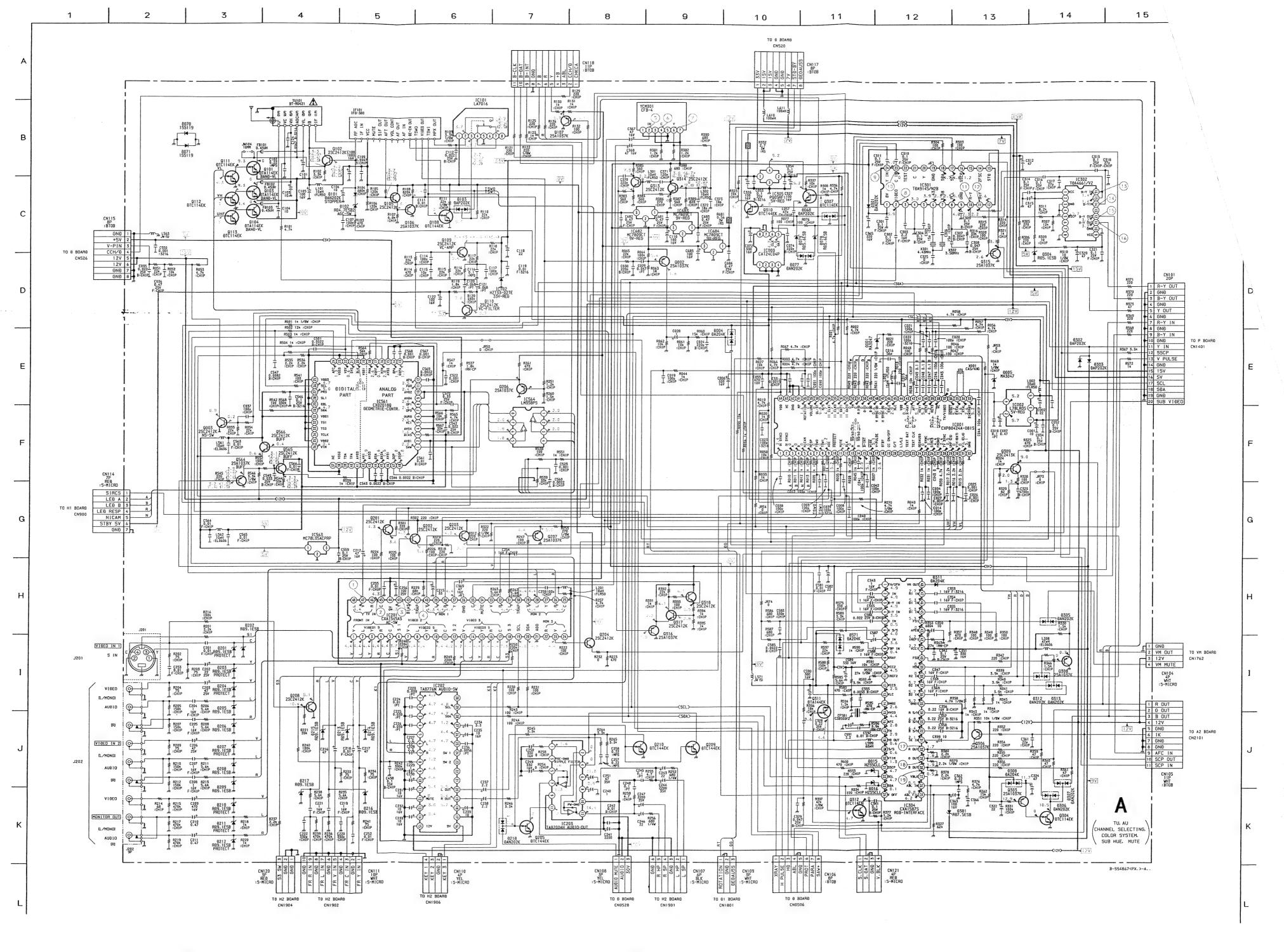
2 L610 100#H 3 L610 Ha001

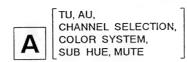
DTC144EK

ROTATION 1 SOURCE SOURC

TO DI BOARD CNIBOI

11

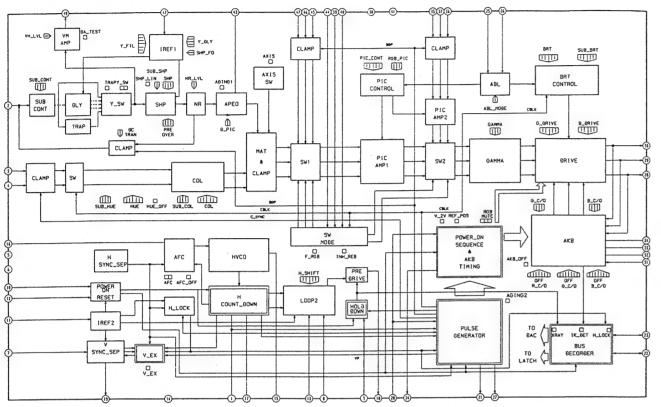




TON,

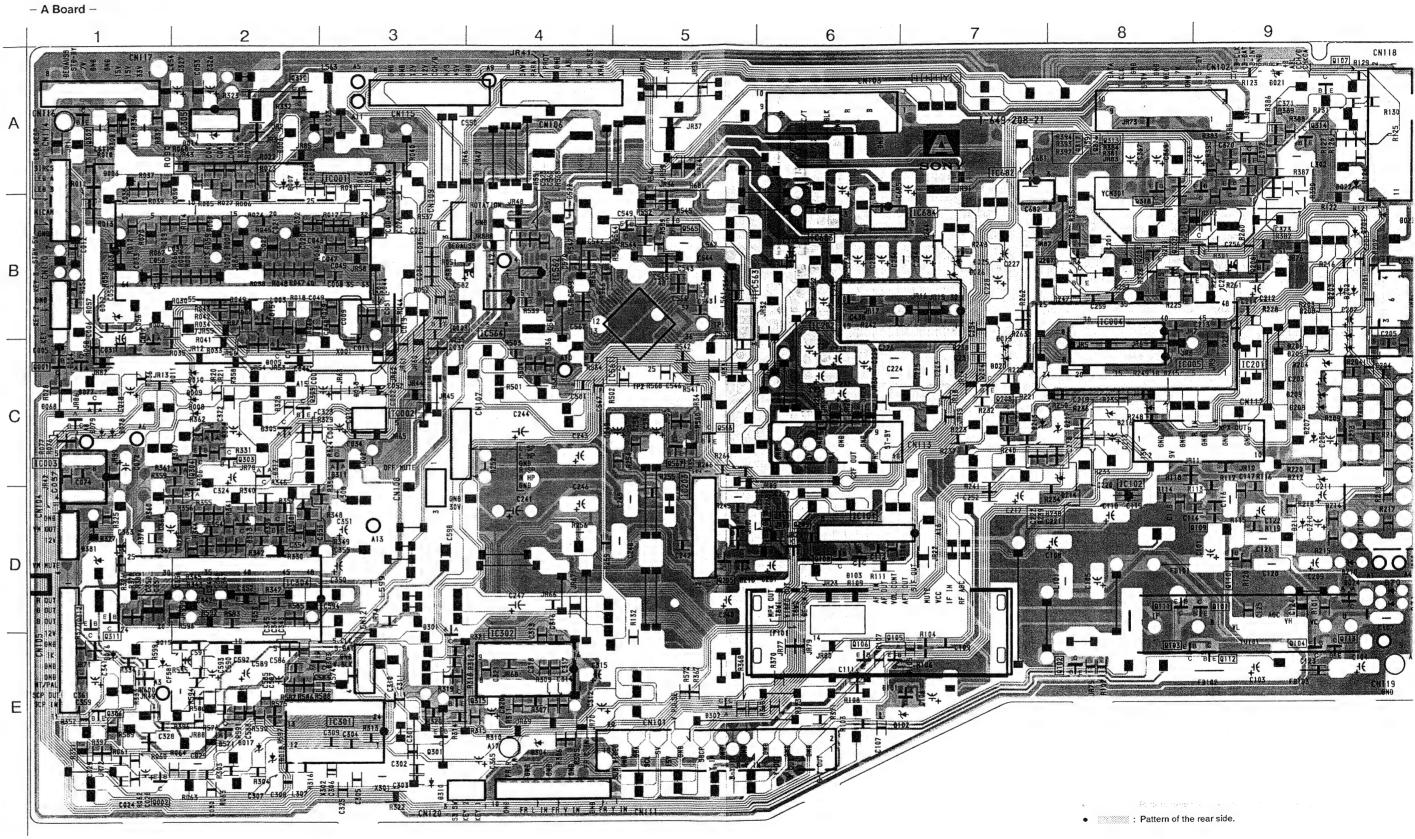
# PRINTED WIRING BOARDS

### A Board IC304 CXA1587S



### • A BOARD

IC	Q104 E-9 Q105 E-6	Q312 D-1 Q313 B-9	D204 C-9 D205 B-9	IF BLOCK
IC001 B - 2 IC002 C - 3 IC003 C - 1	Q106 E-6 Q107 A-9 Q108 D-6	Q314 A - 9 Q315 E - 3 Q316 A - 9	D206 B - 9 D207 C - 9 D208 C - 9	IF101 D - 6
IC101 D-6	Q109 D-9 Q110 D-9	Q317 A - 9 Q318 A - 8	D209 C-9 D210 D-9	TUNER
IC201 C - 9 IC202 B - 6 IC203 D - 5	Q111 D-9 Q112 E-9 Q113 E-9	Q564 B - 5 Q565 B - 5 Q566 C - 5	D211 D-9 D212 D-9 D213 C-8	TU101 E-9
IC301 E - 3 IC302 E - 4	Q201 B-9 Q202 B-8	DIODE	D214 C-8 D215 C-8	CRYSTAL
IC302 E - 4 IC304 D - 2 IC305 A - 2 IC561 C - 5 IC563 B - 5 IC564 B - 4 IC682 A - 7 IC683 B - 6 IC684 B - 6	Q203 B - 8 Q204 C - 7 Q205 D - 5 Q206 B - 9 Q207 B - 8 Q208 C - 7 Q209 D - 6 Q210 D - 5 Q303 C - 2	DIODE  D001 B - 2 D004 C - 1 D005 C - 2 D015 E - 1 D016 E - 1 D068 C - 1 D077 C - 1 D078 C - 1	D216 C - 8 D217 C - 8 D218 D - 5 D301 D - 3 D302 E - 5 D303 E - 2 D304 E - 4 D305 C - 2 D306 D - 2	X001 C-3 X301 E-3 X302 E-2
TRANSISTOR	Q304 C-2 Q306 E-1	D079 C-1 D101 E-7	D307 C-2 D308 C-2	
Q002 E-1 Q003 B-3 Q101 D-9 Q102 E-8 Q103 E-9	Q307 A - 1 Q308 D - 2 Q309 C - 2 Q310 A - 2 Q311 D - 1	D102 E - 6 D103 D - 6 D201 B - 9 D202 B - 9 D203 B - 9	D311 C - 3 D312 C - 2 D313 C - 2 D381 D - 1 D571 E - 2	

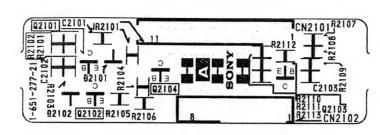


A2 R, G, B IN/OUT, SCP IN/OUT

PRINTED WIRING BOARDS

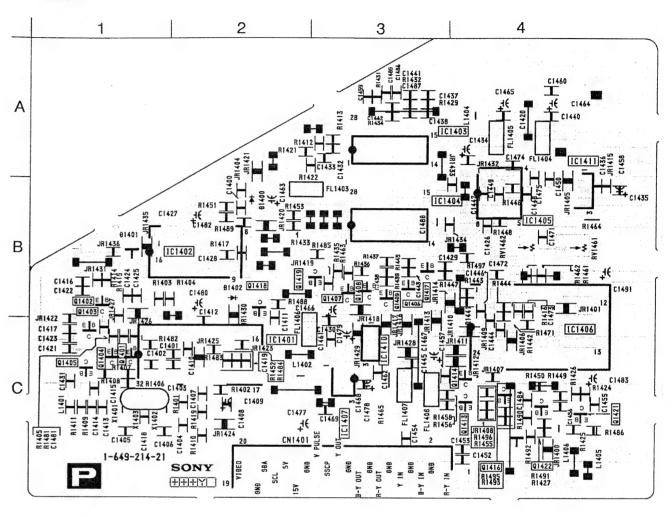
- VM Board -

- A2 Board -



P





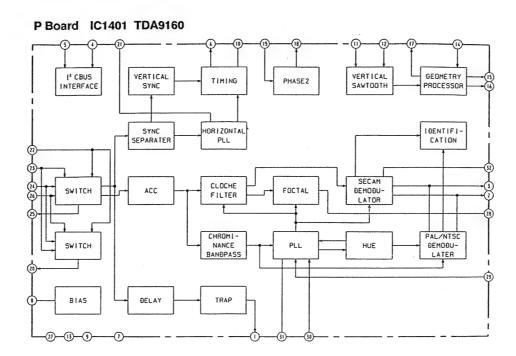
## • P BOARD

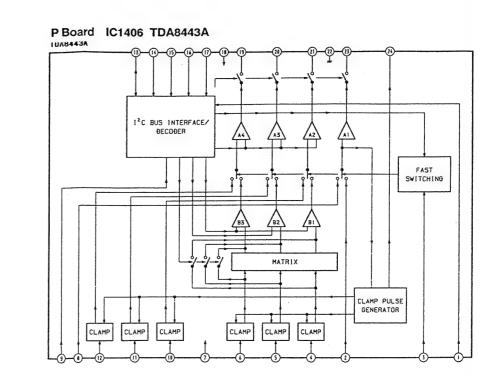
IC	Q1403 Q1404	C - 1 C - 1	DIC	DDE
IC1401 C - 2 IC1402 B - 2 IC1403 A - 3	Q1405 Q1406 Q1407	C-1 B-3 B-3	D1400 D1401	B – 2 B – 1
IC1404 B - 3 IC1405 B - 4	Q1408 Q1409	B – 3 B – 3	CRY	STAL
IC1406 C - 4 IC1407 C - 3 IC1410 C - 3 IC1411 B - 4	Q1413 Q1414 Q1416 Q1417 Q1418 Q1419	C-4 C-4 C-4 B-3 B-2 B-3	X1401 X1402	C – 1 C – 1
Q1401 C - 1 Q1402 B - 1	Q1420 Q1421 Q1422	C - 4 C - 4		

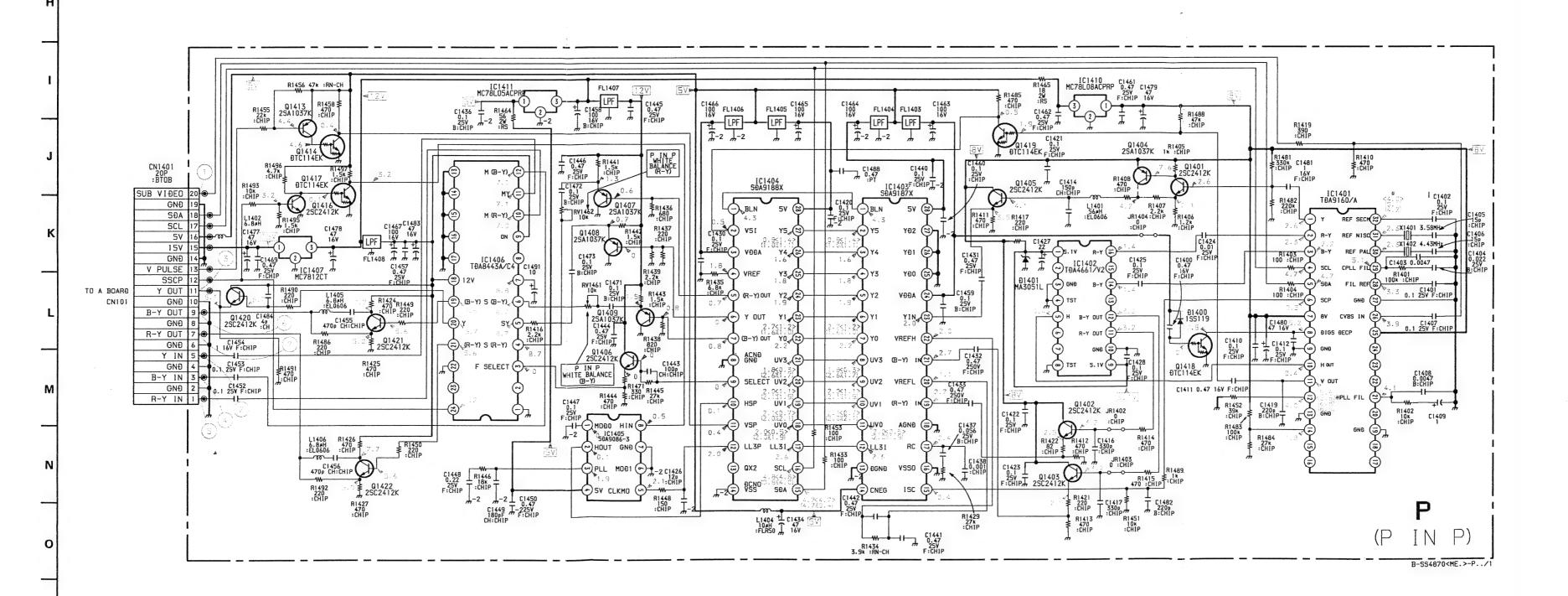
# • P BOARD WAVEFORMS

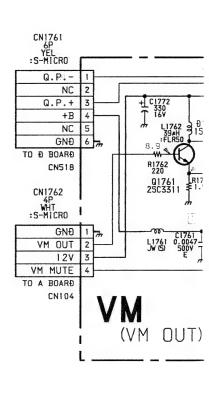
1.3 Vp-p (H)

TO BOARD WAVE OF ME			
1	PAL SECAM NYSC3.58	2 NTSC4.43	PAL SECAM NYSC3.58
	Jana Jana	1/1	Jana Jana
2.0 Vp-p (H)	0.4 Vp-p (H)	0.4 Vp-p (H)	0.4 Vp-p (H)
3 NTSC4,43	4	5	6
		monden	
0.4 Vp-p (H)	1.5 Vp-p (H)	1.3 Vp-p (H)	1.5 Vp-p (H)
7			

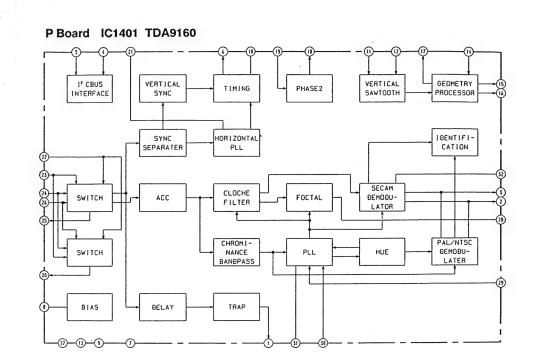


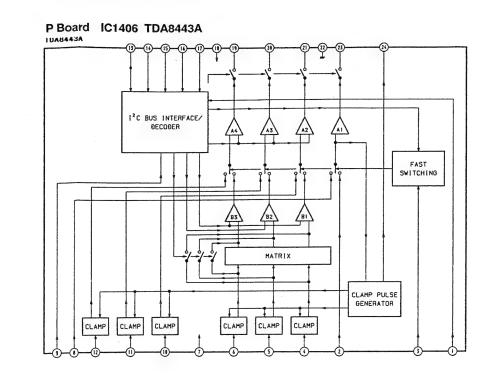


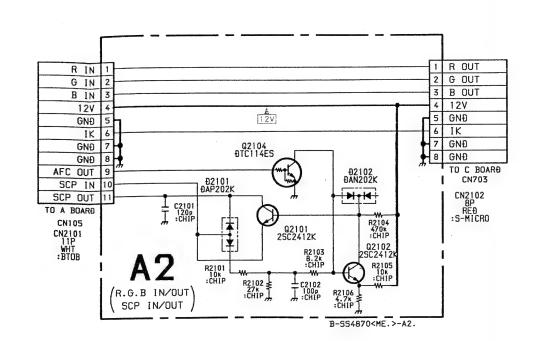


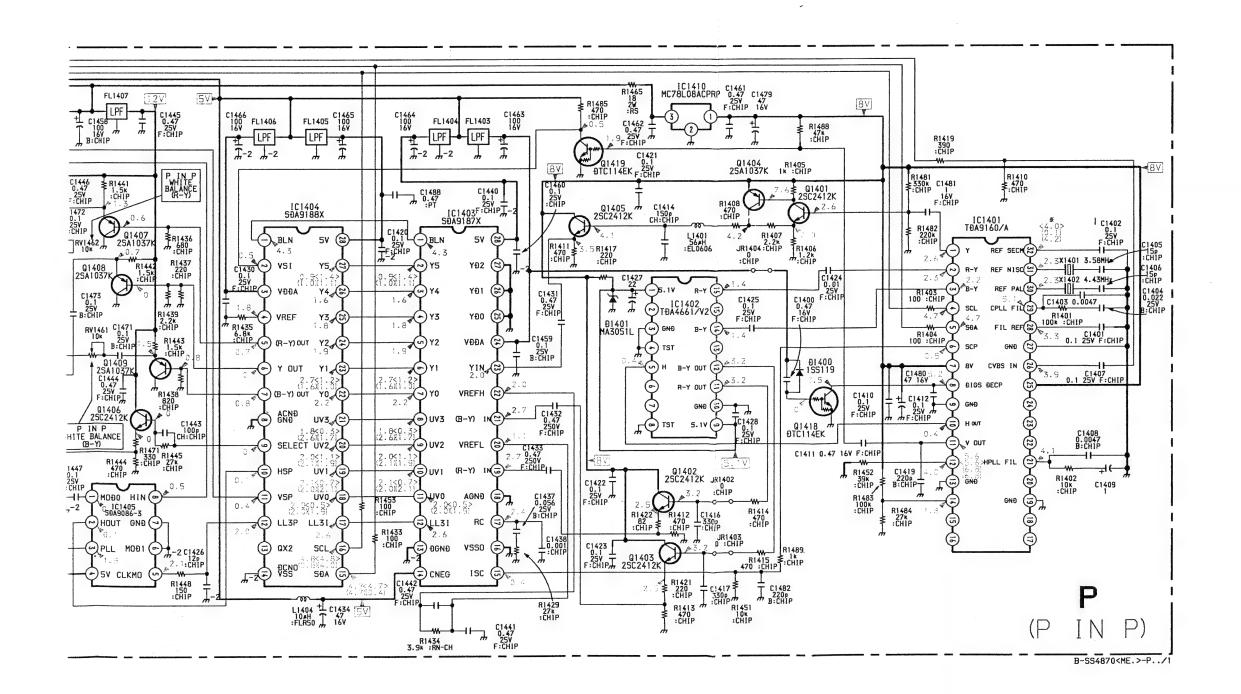


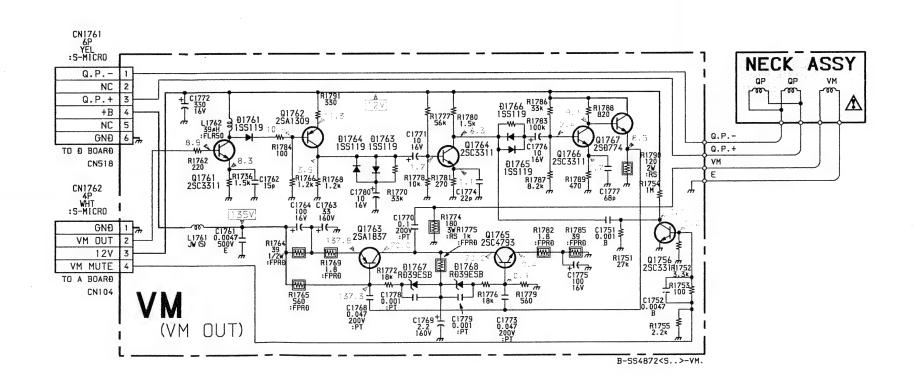
-58-

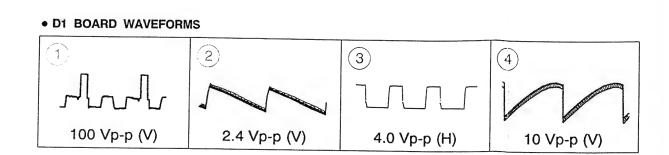


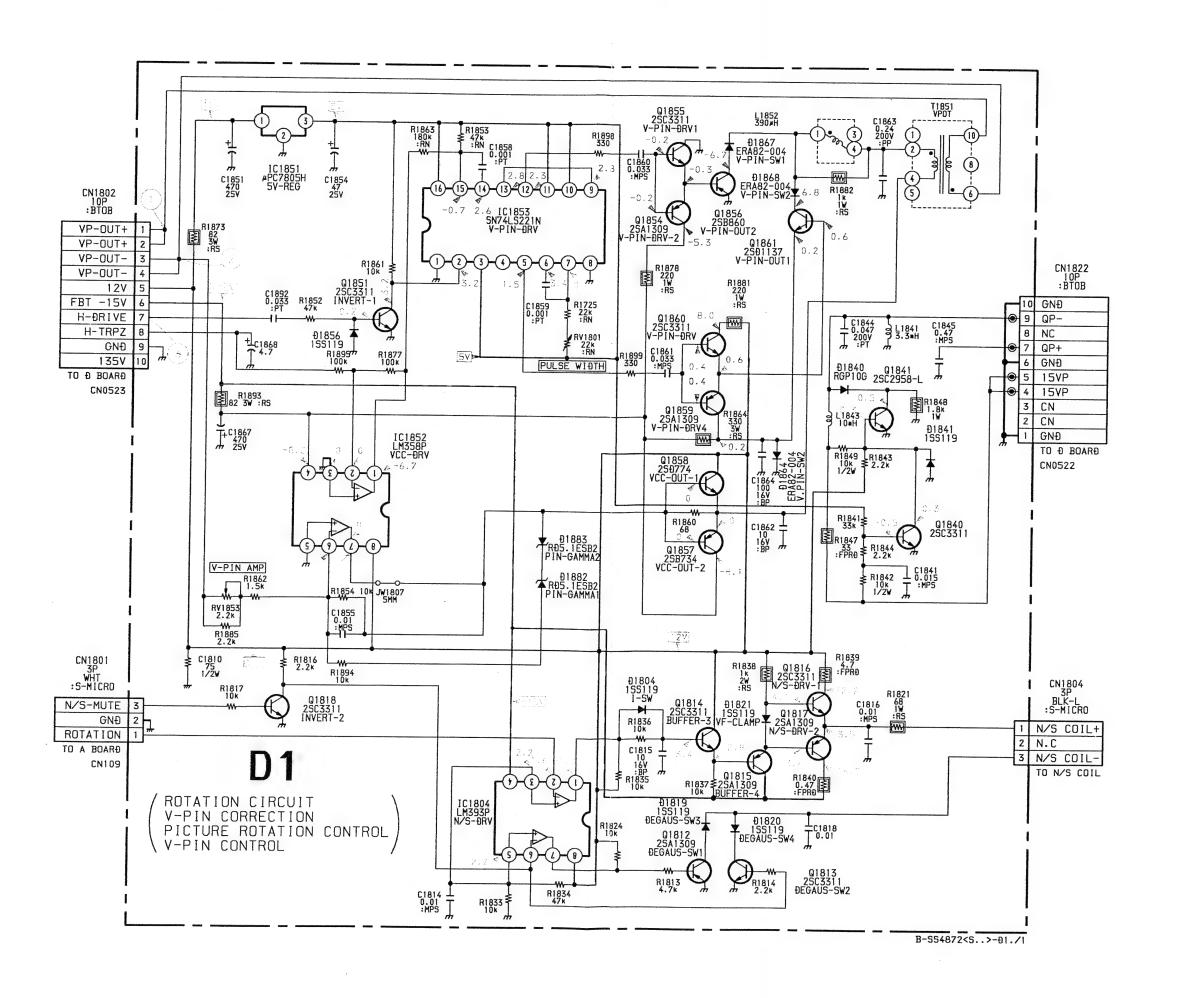






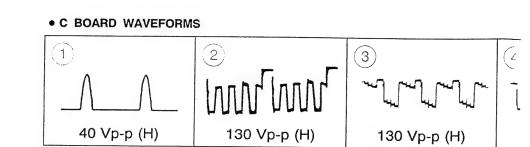


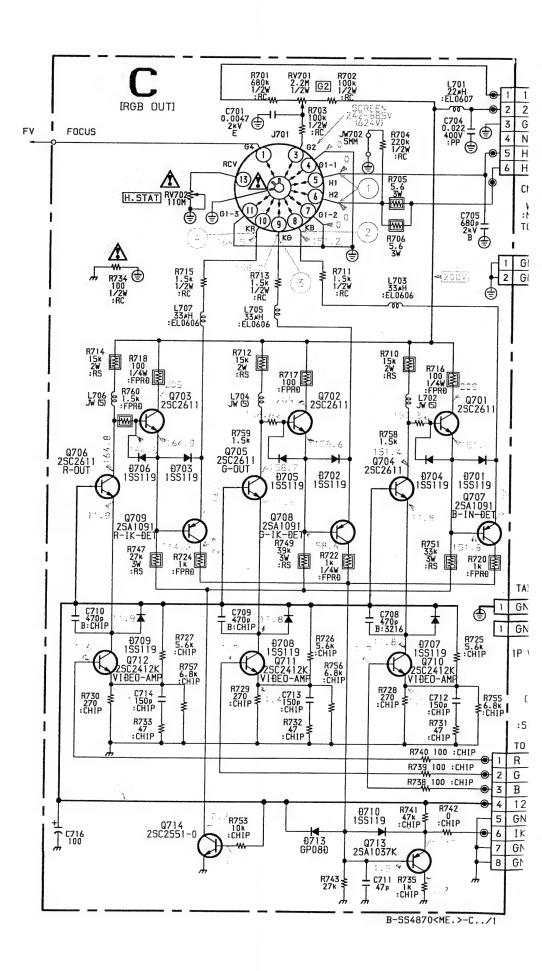




Schematic diagrams

C D1 boards →

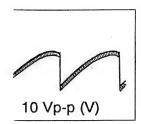


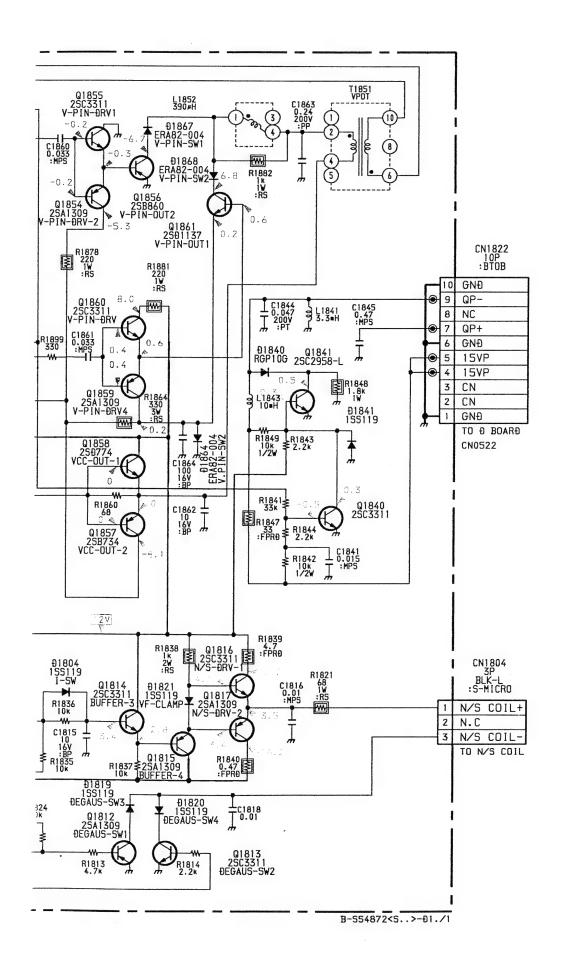


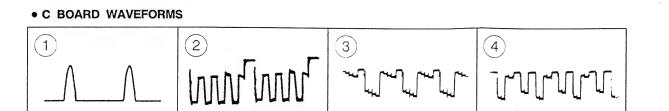
Schematic diagrams

A 2 P VM boards

40 Vp-p (H)



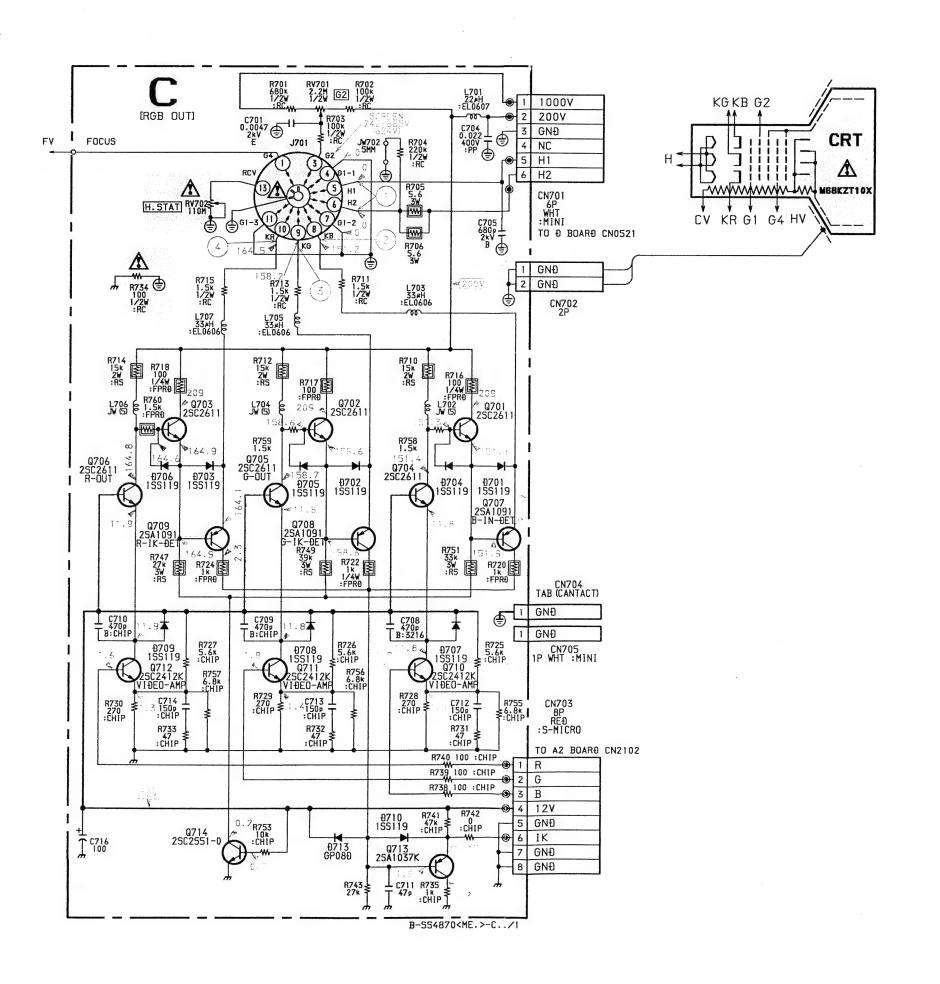




130 Vp-p (H)

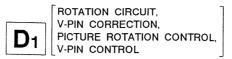
130 Vp-p (H)

130 Vp-p (H)



#### KV-K29CF1 RM-845P

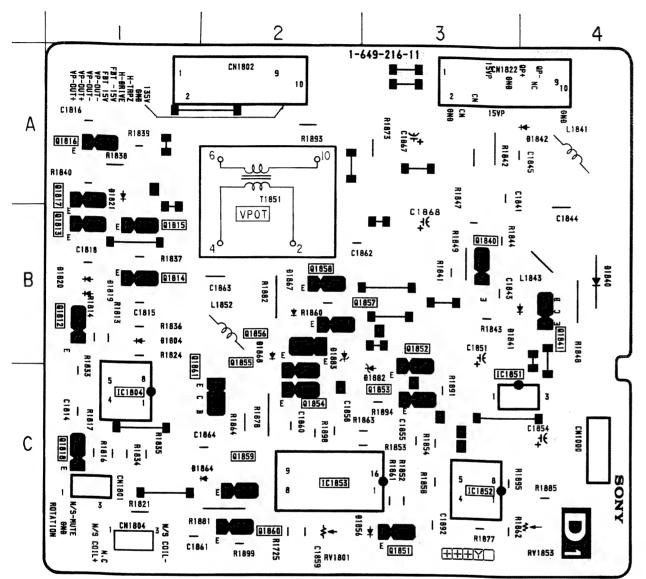
# KV-K29CF1

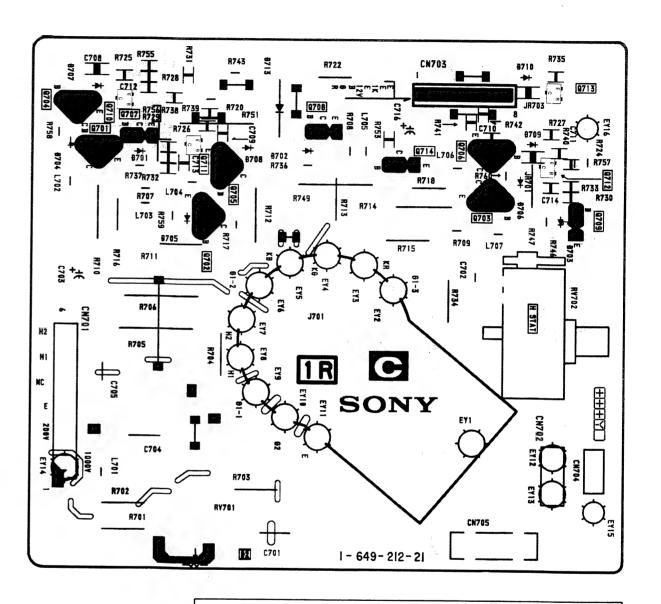


# C [R, G, B OUT]

- C Board -

# PRINTED WIRING BOARDS - D1 Board -





### • D1 BOARD

		7
IC IC1804 C - 1 IC1851 C - 3	Q1851 C-3 Q1854 C-2 Q1855 C-2 Q1856 B-2	D1856 C - 3 D1864 C - 2 D1867 B - 2 D1868 B - 2
IC1852 C - 3 IC1853 C - 2	Q1857 B - 2 Q1858 B - 2 Q1859 C - 2	D1882 C - 3 D1883 B - 2
TRANSISTOR	Q1860 C-2 Q1861 C-2	VARIABLE RESISTOR
Q1812 B-1 Q1813 B-1 Q1814 B-1	DIODE	RV1801 C - 2 RV1853 C - 4
Q1815 B-1 Q1816 A-1 Q1817 A-1	D1804 B-1 D1819 B-1 D1820 B-1	
Q1818 C-1 Q1840 B-3 Q1841 B-4	D1821 A - 1 D1840 B - 4 D1841 B - 3	

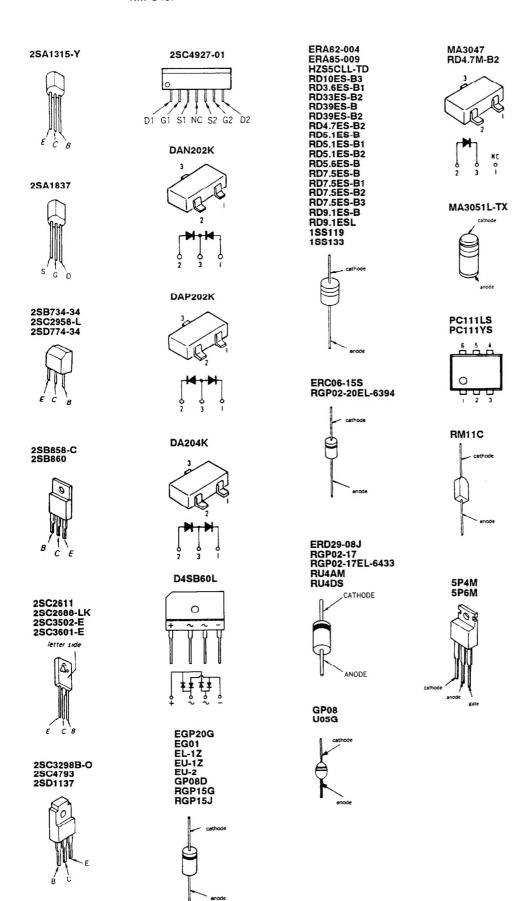
# 2

#### NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

# 6-5. SEMICONDUCTORS SE135N-LF12 TDA9160/N2 CAT24C04P LM358P LM393P LA7016 1. Vout 2. Vin 3. GND ñannannannañ SDA9086-3 μ PC358C μ PC393C LM358PS DTA114EK DTA144EK DTC114EK DTC144EK 2SA1037K 2SA1162-G 2SC2412K 2SC2412K-QR 2SC2413K 2SC2413KQ 1 2 3 4 (Top view) 1 2 3 4 SN74LS221N TDA4661/V2 CXA1545AS CXA1587S <u>តំណាណពាក់</u> L78LR05D-MA <del>0000000</del> (TOP VIEW) CXD2018Q STR-81145A DTC114ES DTC144ES MC78L05ACPRP NJM78L05A **TA8200AH** SDA9187X SDA9188X MC7809CT MC7812CT NJM78M09FA TA7805S μ PC7805H 2SA1091-O 2SC2551-O TA8776N (Top view) CXP80424 CXP80424-SV4652 (Top view) 2SA1175-HFE 2SA1309A 2SC2785-HFE 2SC3311A TDA8443A/C4 PQ05RF1 TDA9145 TDA9145/N2B (Top view) HZT33-02TE $\mu$ PC574J (Top view)

# KV-K29CF1



# SECTION 7 **EXPLODED VIEWS**

#### NOTE:

- NUIE:

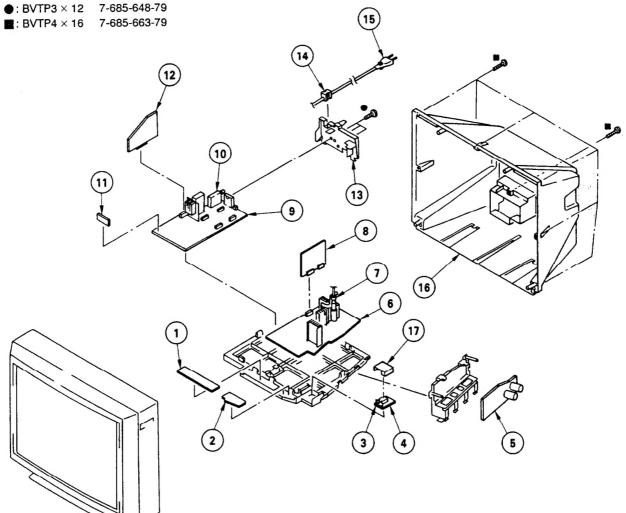
   Items with no part number and no description are not stocked because they are seldom required for routine service.

   The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked " \* " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark A are critical for safety.

Replace only with part number specified.

#### 7-1. CHASSIS

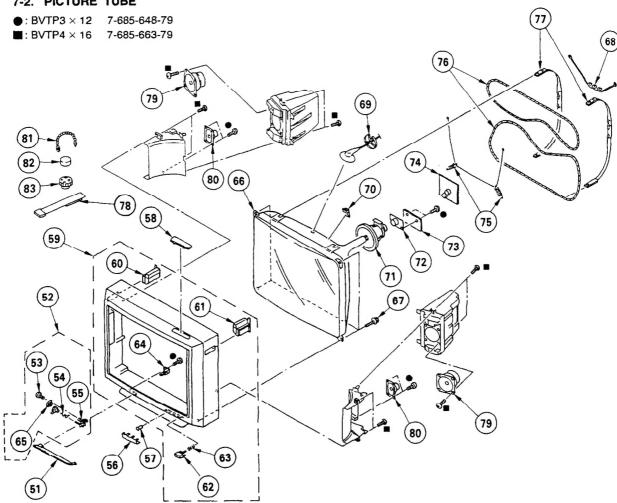


REF.NO. PART NO.	DESCRIPTION	REMARK	REF.N	O. PART NO.	DESCRIPTION REMARK
1 *1-649-207 21 2 *1-649-206-21 3 <b>1</b> -571-433-12 4 *A-1241-131-A 5 *A-1241-139-A	FI BOARD, COMPLETE		10 11 12 13 14		P BOARD, COMPLETE COVER, TERMINAL
6 *A-1346-238-A 7	TRANSFORMER, FLYBACK (NX2603//M3/ D1 BOARD, COMPLETE	В)	15 16 17	<b>A.</b> 1-574-062-51 4-043-176-01 4-043-694-01	CORD, POWER (WITH CONNECTOR) 6.0A/250V COVER, REAR COVER, POWER SWITCH

The components identified by shading and mark  $ilde{\mathbb{A}}$  are critical for safety.

Replace only with part number considered. specified.

## 7-2. PICTURE TUBE



REF.NO	. PART NO.	DESCRIPTION	REMARK	REF.N	O. PART NO.	DESCRIPTION	REMARK
51 52 53 54 55	X-4031-956-1 X-4031-244-1 4-033-184-01 4-041-016-01 4-041-017-01	DOOR ASSY, CONTROL DAMPER ASSY SCREW, SPECIAL SPRING SHAFT (MAIN), DAMPER DOOR	53-55,65	68 69 70 71 72		BAND, DEGAUSSING COIL HOLDER, HV CABLE SPACER, DY DEFLECTION YOKE Y29GXA(SBN) NECK ASSY, PICTURE TUBE (NA-308)	
56 57 58 59 60	4-042-936-11 4-042-927-01 1-467-539-11 X-4031-743-1 4-042-942-11	WINDOW, ORNAMENTAL GUIDE, LIGHT SWITCH BLOCK CABINET ASSY (WITH BEZEL ASSY) HANDLE (L)	60-64	73 74 75 76 77	*A-1331-376-A 4-369-318-61	SPRING, TENSION	
61 62 63 64 65	4-042-943-11 4-042-937-01 4-036-405-11 4-042-940-01 4-036-880-11	HANDLE (R) BUTTON, POWER SPRING, COMPRESSION UNIT, LOCK DAMPER		78 79 80 81 82	X-4309-608-0 1-504-479-11 1-504-486-11 4-308-870-00 1-452-032-00	PERMALLOY ASSY, CONVERGENCE SPEAKER (10CM) SPEAKER (9X5CM) CLIP, LEAD WIRE MAGNET, DISK; IONM Ø	
66 67	<b>∆.</b> 8-733-841-05 4-390-505-01	PICTURE TUBE (M68KZT10X) SCREW (7), TAPPING		83	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM $\phi$	